

400-A-20

1999-0042

Virginia Street

Pines Subdivision

Pines of Portland Inc.

on Spreadsheet

**PINES OF PORTLAND, INC.**  
**426 Forest Avenue**  
**Portland, ME 04101**  
**(207) 772-2127**

March 25, 2003

Mr. Michael Bobinsky  
Director of Public Works  
City of Portland  
55 Portland Street  
Portland, ME 04101

RE: Final Punch List Items – Acceptance of Kansas Ave. and Wyoming Ave. in  
North Deering – Pines of Portland, Inc., Developer.

Dear Mr. Bobinsky:

Last fall, Todd Merkle of the Public Works Department notified us of two deficiencies which needed to be corrected in order for the above streets to be officially accepted by the City of Portland:

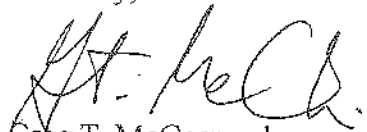
- 1.) Granite monumentation at street intersections: Granite monuments have been installed by Survey Inc. as required.
- 2.) Replacement of 3" street light poles with 4" light poles (light fixture meets specs): The light poles on Wyoming St. are 4" and meet specs. Pines of Portland is agreeable to changing the existing 3" poles to 4" poles on Kansas Avenue. We are in the process of completing this work within the next two weeks or so.

Our loan officer at Maine Bank & Trust, Mr. Karl Sucheck, would very much like to have the original letters of credit obligations extinguished and replaced with a 10% defect bond as specified your ordinance. All the paperwork in this regard has been issued and is in appropriate hands at City Hall. We'd like this to occur by April 10<sup>th</sup>.

Page 2  
Michael Bobinsky  
March 25, 2003

I am unsure of the exact process needed to accomplish this and would appreciate your help in this regard.

Sincerely,



Greg T. McCormack,  
Pines of Portland, Inc.

cc Jay Reynolds – City Hall  
Todd Merkle – Public Works  
Penny Littell – City Hall  
Lee Urban – City Hall  
✓Kandi Talbot – City Hall  
Karl Suchecki – Maine Bank & Trust

March 13, 2002

To: Kandi Talbot  
From: Greg McCormack  
Re: Amended Plan Lot 11 / 16 Pines.


Dear Kandi,

Please find an enclosed original amended plan along with six copies altering the lot lines as a result of the street being vacated between Lot 11 and Lot 16 Pines.

We had originally discussed the format of the plan and signature block, which would be needed for recording.

Could you please have Alex sign as soon as possible as we need to start construction of a home on Lot 11.

Thank you,



Greg T. McCormack

February 6, 2002

Kandi Talbot  
City of Portland  
Planning Department  
389 Congress Street  
Portland, Maine 04101

RE: Pines of Portland Escrow Account

Dear Kandi:

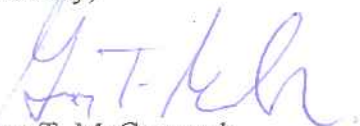
Pines of Portland established a \$15,000 escrow account to resolve any potential drainage problems associated with the development.

At the time we established the account, we were to be furnished the bank institution and account number for that account for our records.

As we have completed the development, we would like to have this information for our permanent files.

Thank you for your attention to this detail.

Sincerely,



Greg T. McCormack

The developer shall place \$15,000 in an interest bearing escrow account to be maintained by the City of Portland. These monies shall be deposited with the City within \_\_\_ days of the approval of the subdivision and shall remain for a period of five (5) years from the completion of all public improvements or the completion of seventy-five percent (75%) of all house lots in the approved subdivision, whichever occurs later. The escrow money shall be accessed by the City, after notice to the developer and a reasonable time to cure, if or when necessary to correct any on- or off-site improvements needed to resolve drainage problems associated with, or attributable to, the project. Determination of the appropriate use of said funds for such purpose shall be made by the Planning Authority in consultation with Dept. of Public Works and consulting engineers as appropriate.

February 20, 2002

Penn Ave / Liberty Way  
street accepted

→ 5 yr escrow shall  
expire 2/20/2007  
upon which time  
City of Portland  
shall be entitled  
to the return  
of the \$15,000 escrow  
plus interest.

Please get  
this to  
KANDI TALBOT



MULKERIN ASSOCIATES  
REAL ESTATE

FAX COVER SHEET

THE  
756-8258 FAX #  
DOES NOT  
WORK.

Date: 11/8/01

Total Pages: 5

To: KANDI TALBOT

Company Fax #:

From: Greg Mc Cormack

Subject:

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CALL US AT 772-2127 IF THERE ARE ANY PROBLEMS.

FILE COPY  
MAILED 4/24/01

4 pages  
Fixed

11/8/01 called Kandi Talbot

Kandi  
Give Me a call.  
Greg.

April 18, 2001

200 875 8844

Kandi Talbot  
Planning Department  
City of Portland  
389 Congress Street  
Portland, Maine 04101

Re: Proposed Building Envelope Change; Lot 11 Pines

Dear Kandi:

As discussed, Pines of Portland, Inc. is seeking to change the building envelope, more particularly the right side line set back of Lot 11, to enable construction of a home compatible with established designs in our neighborhood.

Originally a paper street existed on the right hand side of Lot 11. This necessitated a 20' set back per zoning regulations (shown on our Recorded Plans). On February 28, 2000, the paper street was vacated by order of the City Council. Additionally, a period of over (1) year has since past which forecloses any potential claims to the interest in the paper street.

Our title attorney, Mr. Chuck McLaughlin of Guaranty Title, has reviewed our proposal. No quiet title action is necessary. According to Attorney McLaughlin, we need only to present a revised plan for review and approval by the Director of Planning and Zoning under the deminimus change provision of our approval.

Could you please advise me at your earliest convenience as to the form of revised plan which would be required.

We would propose altering the original plan as recorded with a notation regarding the plan change in the note section. Thank you in advance for your help.

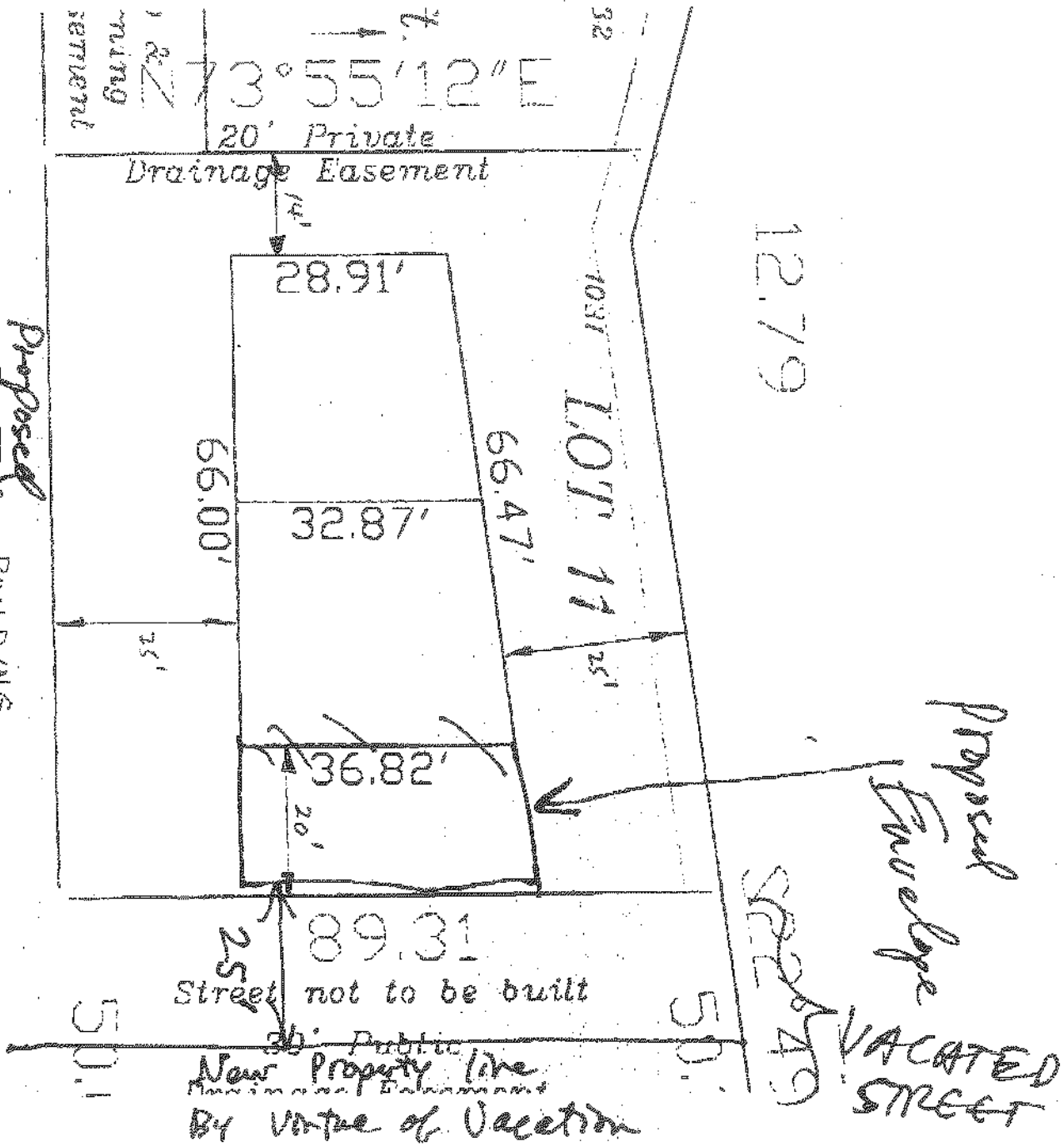
Sincerely,

  
Gregory T. McCormack

Cc: Mr. Alex Jaegerman  
Penny Littell  
Marge Schmuckal

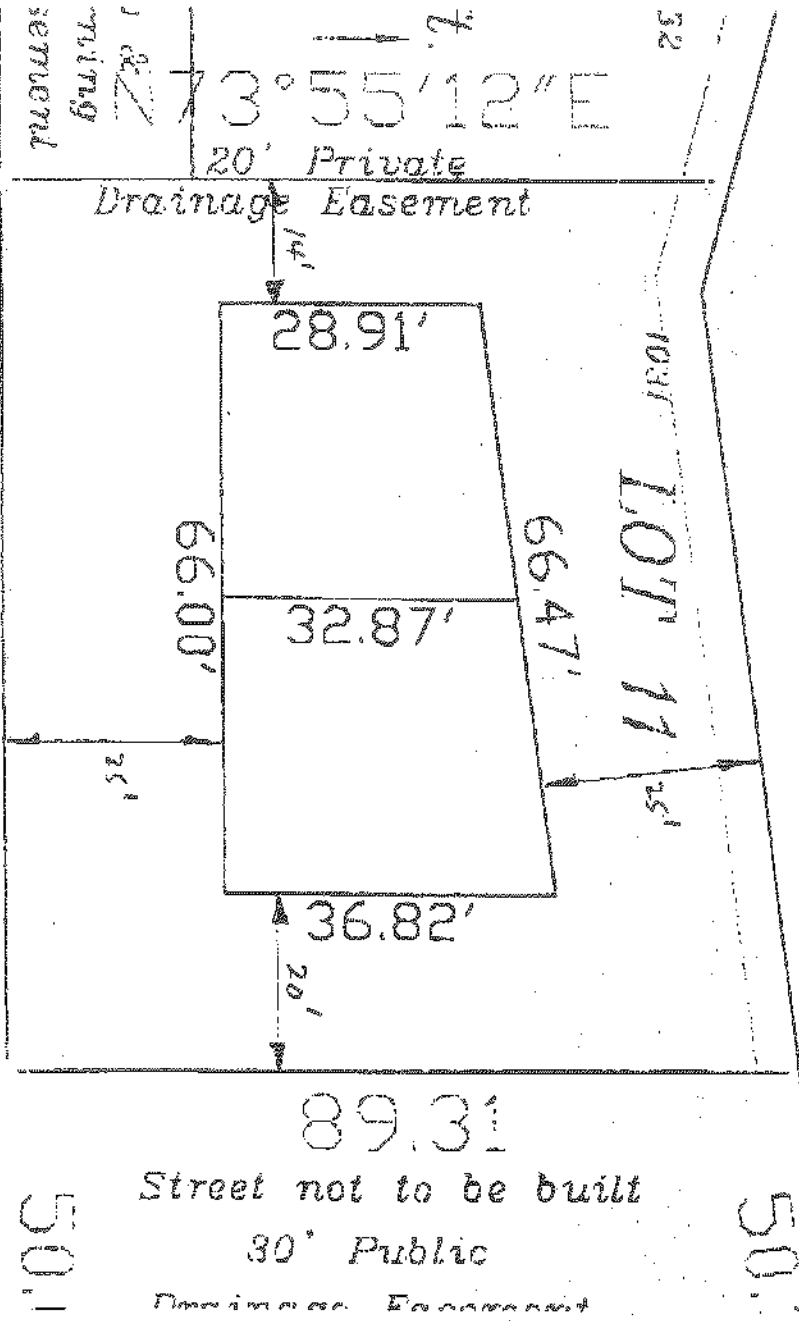


TRY THIS  
1" = 20'



New Property Line  
Maximum of 50' Minimum  
By virtue of Vacation

TRY THIS  
14=20'



12.79

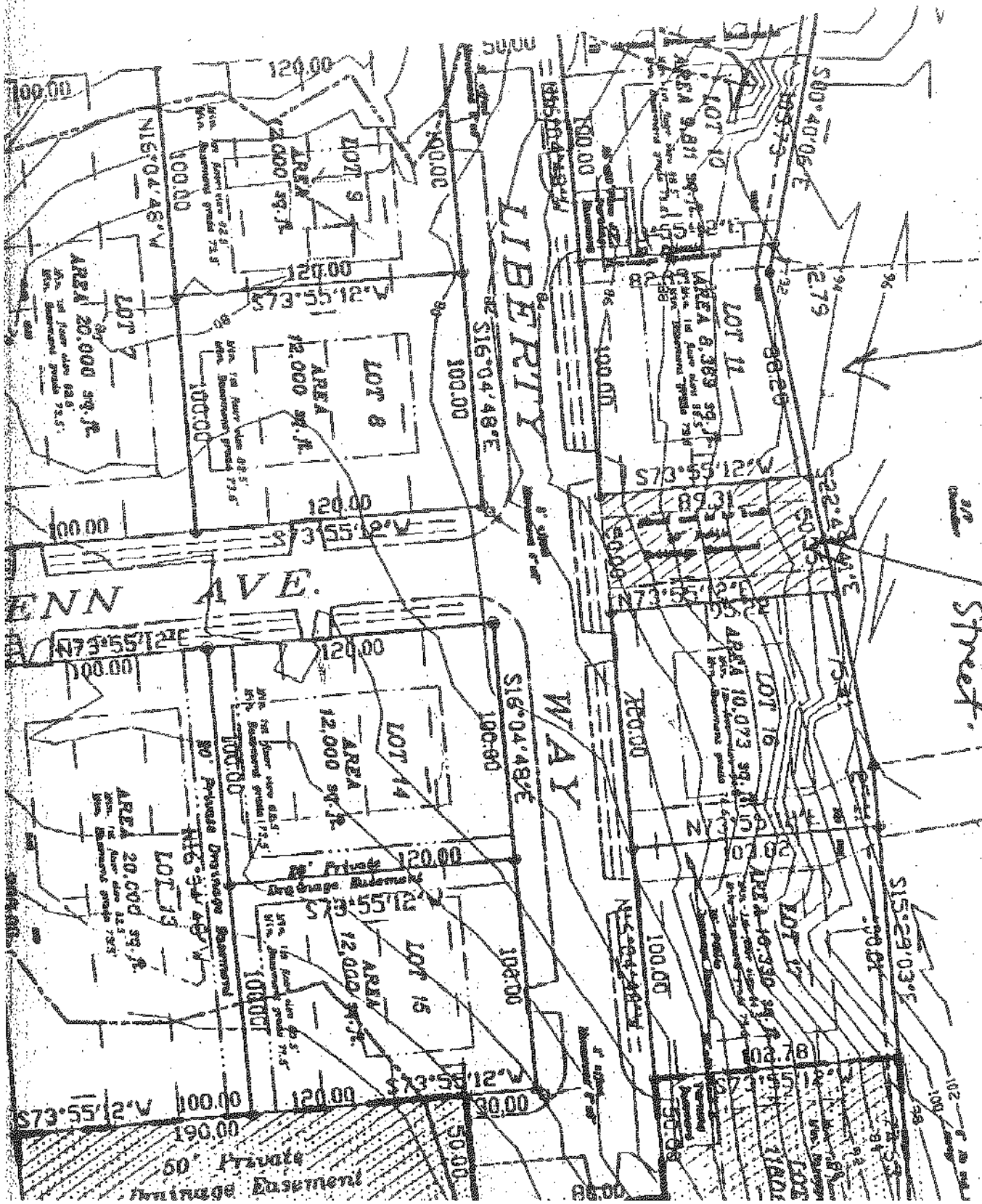
S 22° 46'

EXISTING BUILDINGS

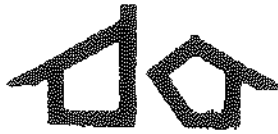
50.1

Street not to be built  
30' Public  
Drainage Easement

50.1



Lot 11  
 is  
 vacated  
 Street.



**KASPRZAK  
INSURANCE  
ASSOCIATES, INC.**

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INSURANCE AND FINANCIAL SERVICES

September 27, 2000

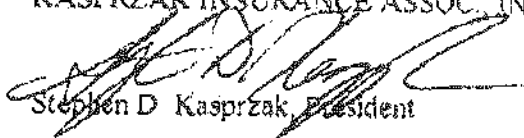
McGoldrick Bros. Blasting Services, Inc.  
488 River Road  
Windham ME 04062

Dear Shawn and Pat,

Per our conversation, I have spoken with your insurance company and they have confirmed there is no set definition of a pre-blast survey. Each situation is different and may require different types of surveys. If you need more information regarding this subject, please give us a call.

Best regards,

KASPRZAK INSURANCE ASSOC., INC.



Stephen D. Kasprzak, President

SDK/wl

# PRETI, FLAHERTY, BELIVEAU, PACHIOS & HALEY, LLC

ATTORNEYS AT LAW

ONE CITY CENTER, P.O. BOX 9546, PORTLAND, MAINE 04112-9546  
TELEPHONE: (207) 791-3000 -- TELEFAX (207) 791-3111  
INTERNET: WWW.PRETI.COM -- E-MAIL: ADMIN@PRETI.COM

*File;  
The Pines*

SEP 28 2000

September 27, 2000

*By E + File  
KT  
SW  
JL*

John Bannon, Esq.  
Murray, Plumb & Murray  
75 Pearl Street  
Portland, ME 04101

Re: David Dargie, et al. v. Pines of Portland, Docket No. AP-99-1-3  
and

Dear John:

The Pines of Portland has been proceeding with construction activities on Lot 19 and elsewhere in the Pines development despite the lawsuits that are pending in the above-referenced matter challenging the legality of the permit approvals necessary for construction. In addition to the Pines' failure to maintain proper erosion control, construction activity has resulted in clearing of vegetation and trees within the required buffer area and blasting of ledge has been undertaken without complying with the pre-blasting survey of my clients' property as required by the Planning Board when it approved the project. Blasting has also apparently been undertaken in the drainage easement on the border of the Dargie's property.

Please be reminded that the complaint in this action, among other things, challenges the City's alleged approval of a ten foot setback at the rear property line (the Falmouth town line) on lot 19 in contravention of the zoning ordinance and the Planning Board's decision dated November 1, 1999. I want to assure you that if our legal challenge is successful we will insist that any violations of the Zoning Ordinance be rectified, including, if necessary, that the building's foundation or any other structures be moved to comply with the ordinance regardless of the cost, inconvenience or liability that might be suffered by the Pines. In addition, the current violations of the permits as granted will be the subject of further action unless they cease and are rectified immediately. All it should take is a tape measure to figure out that the buffer zone has been breached. Blowing up the drainage easement will not be easily defensible.

Sincerely,

*[Signature]*  
John P. McVeigh

JPM/cc

cc: Charles Lane, Esq.

- MEMBERS:
- SEVERIN M. BELIVEAU
  - HAROLD C. PACHIOS
  - MARK L. HALEY\*
  - MICHAEL J. GENTILE
  - CHRISTOPHER D. NYRAN
  - ERIC P. STALFFER
  - JONATHAN S. PIPER
  - DANIEL RAPAPORT
  - JOHN P. DOYLE, JR.
  - BRUCE C. GERRITY
  - ANTHONY W. BLUNTON
  - ALFRED C. FRAWLEY
  - JEFFREY T. EDWARDS
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  - RANDALL B. WEILL
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  - VIRGINIA E. DAVIS
  - LEONARD M. GULINO
  - DENNIS C. SBREGA
  - GEORGEY K. CUMMINGS
  - JUDITH SAPP\*\*
  - ESTELLE A. LAVOIE
  - SUSAN E. LOGHIDICE
  - MICHAEL KAPLAN
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  - JOSEPH G. DONAHUE
  - DAVID B. VAN SLYKE
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  - JOHN P. MCVEIGH
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  - ROBERT O. NEWTON
  - JOHN S. RUDD
  - TIMOTHY J. BRYANT
  - JAMES E. PUPPIS
  - BONNIE I. MARTINOUGH
  - DONALD J. SIPE

SENIOR COUNSEL TO THE FIRM:  
HON. GEORGE J. MITCHELL

- COUNSEL:
- ROBERT F. PRETI
  - ALBERT J. BELIVEAU, JR.
  - ROBERT W. SMITH
  - MARK B. LEDUC
  - GREGORY P. HANSEL
  - NAOMI SAKAMOTO
  - PETER S. CARLISLE
  - JEANNE T. COHN-CONNOR

- ASSOCIATE COUNSEL:
- TRACEY G. BURTON
  - ROY T. PIERCE
  - ELIZABETH A. CAMPIELL
  - JON A. FITZGERALD
  - JEFFREY W. PETERS
  - MATTHEW J. LAMOURIE
  - SIGMUND D. SCHUTZ
  - SUSAN A. PEREIRA
  - JOEL H. THOMPSON
  - SHARON G. NEWMAN
  - MICHAEL A. CUNNIFF
  - MICHAEL K. MAHONEY
  - LINDA S. LOCKHART

\*Leave of absence.

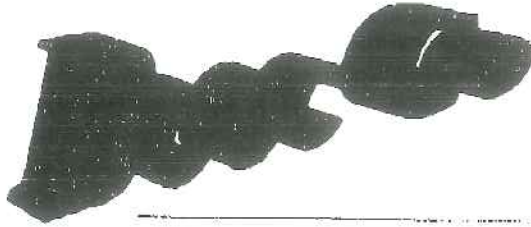
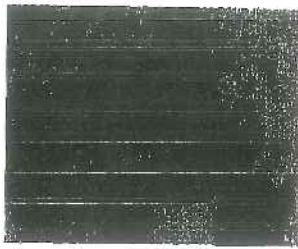
\*\*Admitted to practice law only in the District of Columbia.

JOHN J. FLAHERTY  
(1929 - 1995)



45 MEMORIAL CIRCLE - P.O. BOX 1058  
AUGUSTA, MAINE 04132-1058  
TELEPHONE: (207) 623-5300 - TELEFAX: (207) 623-2914

THIRTY FRONT STREET, P.O. BOX 665  
BATH, MAINE 04530-0665  
TELEPHONE: (207) 443-5576 - TELEFAX: (207) 443-6665



DATE: September 22, 2000  
 TO: Mulkerin - Greg McCormick  
 FROM: Becc Co. - Chuck Blakeman  
 RE: Pre-Blast Survey

Post-it® Fax Note	7671	Date	# of pages 1
To	DAVE CADDELL	From	Greg + Amy
Co./Dept.		Co.	
Phone #		Phone #	846-9208
Fax #		Fax #	

*Pre-Blast Survey Info Requested.*

The following pre-blast survey was done to the specifications noted below.

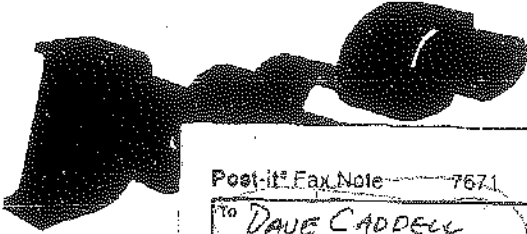
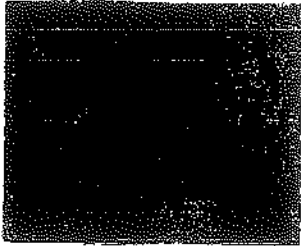
Becc Company conducts pre-blast condition surveys prior to blasting. The surveys are done in compliance with local, state, and federal guidelines. A pre-blast condition survey (PBS) consists of a video document. A PBS includes video taped recordings of any visible defects existing within a structure before blasting begins. A PBS inspection establishes for the Property Owner and the Blasting Contractor a clear record of the condition of a property prior to the beginning of blasting. The inspection makes all parties aware of any existing damage or deterioration.

- These documents are considered "confidential" and are kept in the vaults at Becc Co. Materials included in the pre-blast survey are **not** public record and are not reviewed unless a property owner has reason to believe his property has been damaged by blasting. These documents can only be used if a valid blasting claim has been submitted to the Blasting company. The documents can be used either by the Blasting company's insurance or by the structure-owner's insurance company for resolution of said claim.

Falmouth, ME

9 Charollette Drive - September 19, 2000

↑  
DANIEL RESIDENCE



Post-it® Fax Note 7671		Date 8-30-00	# of pages 1
To Dave Caddell	From Greg A.C. Cormack		
Co./Dept.	Co.		
Phone #	Phone #		
Fax #	Fax #		

DATE: August 31, 2000  
 TO: Mulkerin - Greg McCormick  
 FROM: Becc Co. - Chuck Blakeman  
 RE: Pre-Blast Surveys

The following pre-blast surveys were done to the specifications noted below.

Becc Company conducts pre-blast condition surveys prior to blasting. The surveys are done in compliance with local, state, and federal guidelines. A pre-blast condition survey (PBS) consists of an interior and exterior video document. A PBS includes video taped recordings of any visible defects existing within a structure before blasting begins. A PBS inspection establishes for the Property Owner and the Blasting Contractor a clear record of the condition of a property prior to the beginning of blasting. The inspection makes all parties aware of any existing damage or deterioration.

These documents are considered "confidential" and are kept in the vaults at Becc Co. Materials included in the pre-blast survey are not public record and are not reviewed unless a property owner has reason to believe blasting has damaged his property. These documents can only be used if a valid blasting claim has been submitted to the Blasting Company. The documents can be used either by the Blasting Company's insurance or by the structure-owner's insurance company for resolution of said claim.

Falmouth, ME

- 68 Ledgewood Drive - July 6, 2000
- 5 Hurley Lane - July 6 & 7, 2000
- 2 Hurley off Ledgewood - August 22, 2000
- 4 Hurley off Ledgewood - August 22 & 23, 2000
- 5 Hurley off Ledgewood - August 22, 2000 (Please note that this is a different residence than the one above)



**CITY OF PORTLAND**

24 August 2000

Mr. Gregory T. McCormack,  
Mulkerin Associates Real Estate,  
426 Forest Avenue,  
Portland, Maine 04101

**RE: The Capacity to Transport and Treat an Anticipated Increase in Wastewater Flows from #103 and #105 Kansas Avenue of a Proposed "Pines of Portland" Subdivision.**

Dear Mr. McCormack:

The existing eighteen-inch diameter asbestos concrete sanitary sewer pipe located in Montana Street has adequate capacity to transport the anticipated wastewater flows of 720 GPD, from your proposed subdivision. The Portland Water District sewage treatment facility, located off Marginal Way, has adequate capacity to treat the anticipated wastewater flows of 720 GPD, from your proposed subdivision.

**Anticipated Wastewater Flows from the Proposed Subdivision**

Proposed Four-Bedroom House @ #103 Kansas Avenue (Lot 24A)	= 360 GPD
Proposed Four-Bedroom House @ #105 Kansas Avenue (Lot 24B)	= <u>360</u> GPD
<b>Total Proposed Increase in Wastewater Flows for this Project</b>	<b>= 720 GPD</b>

If I can be of further assistance, please call me at 874-8832.

Sincerely,  
**CITY OF PORTLAND**

Frank J. Brancely, BA, MA  
Senior Engineering Technician

FJB

- cc: ✓ Joseph E. Gray, Director, Department of Planning & Urban Development, City of Portland
- ✓ Kandi Talbot, Planner, Dept. of Planning & Urban Development, City of Portland
- Katherine A. Staples, PE, City Engineer, City of Portland
- Bradley A. Roland, PE, Environmental Projects Engineer, City of Portland
- Anthony W. Lombardo, PE, Project Engineer, City of Portland
- Stephen K. Harris, Assistant Engineer, City of Portland
- Desk File





**Albert Frick Associates, Inc.**

**Soil Scientists & Site Evaluators**

95A County Road      Gorham, Maine 04038  
(207) 839-5563      FAX (207) 839-5564

Albert Frick SS, SE  
James Logan SS, SE  
Matthew Logan SE  
Brady Frick, SE

August 18, 2000

Mr. Steve Bushey  
DeLuca-Hoffman Associates, Inc.  
778 Main Street, Suite 8  
South Portland, ME 04106

Re: Wetland delineation review for proposed Lot 24A/24B area, The Pines s  
subdivision, terminal end of Kansas Avenue, Portland

Dear Steve:

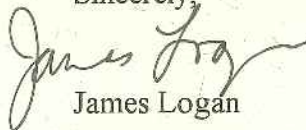
I met with you on the above-referenced project on August 8, 2000 to review, at the City's request, a portion of the wetland delineation prepared for the site by Pinkham & Greer Consulting Engineers, Inc.

I observed the portion of delineation directly adjacent to the area proposed for construction on Lot 24A & 24B, near the Portland/Falmouth boundary line. Flag numbers noted in the field were the 200 series (#202-218, then various numbers through the 300, 400 & 500 series) to a point beyond all proposed construction on the property. I was in agreement with the majority of the line as flagged, excepting one small area at the far end of site, where a small, scoured drainage way was observed, and which was not shown on the plan submitted for review.

I have since reviewed a fax copy of a revised wetland delineation plan prepared by Pinkham & Greer, showing the minor adjustments made on the basis of our review, with relocated proposed structures that conform to required setbacks.

It is my opinion that the revised plan represents that this portion of the wetland delineation was done in accordance with the U.S. Army Corp of Engineers Wetland Delineation Manual. I trust this will assist in the final review of the project. Please feel free to call should you have additional questions or matters for discussion regarding the site.

Sincerely,

  
James Logan





170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

March 9, 2000  
File:98113

A & G Associates  
Forest Ave  
Portland, Maine

RE: The Pines of Portland

Dear Amy and Greg:

As part of the conditions of approval for The Pines of Portland residential subdivision at Penn and Kansas Avenues, an additional assessment of basement water conditions of dwellings adjacent to Virginia Avenue was requested. An initial assessment was made in September 1999 as part of the original approval process. I have attached a copy of that report.

Site visits were made to the area on March 3<sup>rd</sup> and 6<sup>th</sup> in order to observe conditions and interview residents in the area regarding basement water conditions. Interviews were conducted with residents on the east side of Virginia Avenue from #131 to #195. Several of these residents had been previously interviewed in the September 1999 assessment.

To summarize the comments made by the residents:

- Most experienced no basement water problems except in the most severe conditions
- The two residents that did experience wet conditions did so during most storm events despite the severity
- Some experienced water problems only when the street flooded
- None had experienced an increase in water problems since the addition of the six houses of phase I
- Several comments were made regarding the existing conditions of storm drain catch basins and drainage ditches being poorly maintained

In general, it would appear that many homeowner improvement initiatives could be done to improve over-all moisture conditions for individual parcels.



CONSULTING ENGINEERS, INC.

Installation of roof gutters to channel water away from foundations, infiltration strips under drip edges and insuring that footing drains are properly maintained are some suggestions. Overall, it appears that to date the development of The Pines has had no adverse effect on the existing conditions.

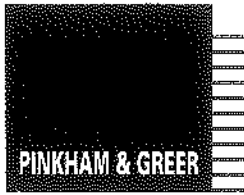
Sincerely,

PINKHAM & GREER

A handwritten signature in black ink, appearing to read 'Alan L. Burnell', written in a cursive style.

Alan L. Burnell  
CSS #417; LSE #267

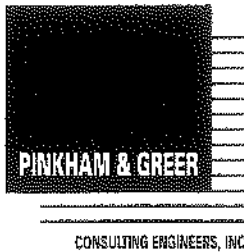
Copy Steve Bushey, DeLuca-Hoffman  
Kandi Talbot, City of Portland



CONSULTING ENGINEERS, INC.

## Basement Moisture Conditions Virginia Street

Street #	Comments
111	No water problems
117	No water problems
121	No water problems
131	No water problems
137	Slight with heavy rains
141	Severe all the time
151	No water problems
157	Sump pump runs most of the time
161	No water problems(has sump pump)
171	No water problems
175	No water problems
181	No water problems(has sump pump)
195	No water problems(has sump pump)



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

September 22, 1999  
File: 98113

Alex Jaegerman  
City of Portland  
City Hall  
Portland, Maine

RE: The Pines of Portland

Dear Alex:

On Friday September 17 and Monday September 20, visits were made to Virginia Street between Kansas Avenue and Penn Avenue for the purpose of interviewing residents regarding basement water problems during rain events. This was done in response to comments made at the public hearing and by you to try to determine the effect that development of "The Pines" will have on these conditions. Additionally, textures of fill and underlying native soils were determined in several areas utilizing a hand auger. The wetland boundary as it was related to the impacted lots was also noted and sketched on a plan. A copy of that sketched wetland boundary has been included as part of this report.

Results of these observations and site visits are as follows:

The underlying native soil material is a very fine marine sediment that contains from 35-55% clay sized particles (<2 mm in size) and has an estimated permeability of 0.2" per hour

Most of the lots have had from 2.5 to 4 feet of moderately well drained coarse structural fill (estimated permeability of 6" per hour) added over the top of the native soil in the immediate area of the houses. Most all of this area was at one time part of the existing wetland.

Basement flooding, for those basements that do flood, occurs during most rain storms not just large storm events

The pattern of basement flooding problems is random as Virginia Street residents at #157 and #141 indicated frequent problems but #151 and #161 did not appear to have any problems.



PINKHAM & GREER

CONSULTING ENGINEERS, INC.

The wetland that is located to the east of Virginia Street is formed by its location in a lower position of the topography and the occurrence of the impermeable marine sediment which causes the water to pond on the surface and collect in the low spots. The water is literally perched on the marine sediment layer and flows in a down gradient direction that most generally follows the slope of the overlying land. This is away for the Virginia Street homes, toward the area of "The Pines".

According to storm water modeling of "The Pines" development, the current 100 year flood elevation is 70.4. After proposed build out of this development, 100 year peak flood elevations will be 72.0. for an approximate 4 hour duration. Since the permeability of the soil is 0.2" per hour and the homes are hydraulically up gradient it is unlikely the water at elevation 72 will cause increased basement flooding at Virginia Street.

The basement flooding at Virginia Street most likely occurs as follows: The overlying coarse fill material becomes saturated with surface and rainwater. The finer textured marine sediment that is below has a very slow permeability so the water becomes perched and flows through the fill and on top of the marine soil layer. It will continue to flow down gradient and outlet either in the wetland, if unobstructed, or into a lower "pocket" if it encounters one, in this case a basement area. This is why basements flood during nearly every rain event. The coarse fill material quickly saturates, causing the water to start flowing down gradient and into the backfill material around the basement. One resident also noted that the catch basin and pipe crossing Virginia Street at Nevada Ave. is full of sediment and the existing ditch near Kansas Ave. needs cleaning. Hopefully the city can attend to this issue quickly.

Sincerely,

PINKHAM & GREER



Alan L. Burnell  
CSS #417;SE 267



STATE OF MAINE  
 17 State House Station  
 Augusta, ME 04333

**Tier 1 / Tier 2 Decision**

Applicant Name & Address:

A&G Associates  
 426 Forest Avenue  
 Portland ME 04101

DEP Project Number: 99-869-S

CORPS Permit Number: 199902985

Project Location: end of Kansas Avenue, Portland

Description of Work: Fill approximately 4,364 square feet of freshwater wetland for the construction of a residential driveway leading into lot #24 and the end of a hammerhead turn-around. This project is associated with a stream crossing and also applies to soil disturbance adjacent to the freshwater wetland. Previously permitted wetland impacts under DEP #98-666-S total 2,756 square feet. Cumulative wetland impacts for this project total 7,120 square feet.

Permit for:	<input checked="" type="checkbox"/> Tier 1	<input type="checkbox"/> Tier 2
Date of Joint Review:		
DEP Decision:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied (see attached letter)
CORPS Action:	<input type="checkbox"/> Approved	<input checked="" type="checkbox"/> Review Pending, contact the Maine Project Office
	<input type="checkbox"/> enclosed	
	<input type="checkbox"/> pending (see below)	

Approval Pending: The Corps, Maine Project office, is in the process of reviewing the project. The final decision will be forthcoming directly from their regional office headquarters.

Special Conditions: No fill for lot development.

Standard Conditions:

- Approval from both the DEP and the Army Corps of Engineers is required in order to proceed with your project. This permit is good for two (2) years from the date signed and is transferable only with prior approval from the Department.
- The project must be completed according to the plans in the application. Any change in the project plans must be reviewed and approved by the Department.
- Properly installed erosion control measures must be installed prior to beginning the project, and all disturbed soil should be stabilized immediately upon project completion.
- A copy of this approval will be sent to the City of PORTLAND. Department approval of your activity does not supersede or substitute the need for any necessary local approvals.

This decision satisfies the Water Quality Certification requirement.

Please note the attached sheet for guidance on appeal procedures. If you have any questions regarding this, please contact Dawn Hallowell at 207-822-6300.

  
 \_\_\_\_\_  
 MARTHA G. KIRKPATRICK, COMMISSIONER

12 | 14 | 99  
 \_\_\_\_\_  
 DATE

cc: file  
 City of Portland  
 Tom Greer, Pinkham & Greer



DEPARTMENT OF THE ARMY  
 NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
 696 VIRGINIA ROAD  
 CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
 ATTENTION OF

DEPARTMENT OF THE ARMY PROGRAMMATIC GENERAL PERMIT  
 STATE OF MAINE, SUMMARY OF SCREENING AND STATUS

A&G ASSOCIATES  
 C/O PINKHAM & GREER  
 170 US ROUTE ONE  
 FALMOUTH, MAINE 04105

CORPS PERMIT # 199902985  
 CORPS PGP ID# 99-627  
 STATE ID# 99-869

DESCRIPTION OF WORK AS ON ATTACHED STATE APPN:

Place fill in freshwater wetlands off Penn and Kansas Avenues at Portland, Maine in conjunction with the development of a residential subdivision. Up to 0.3 acres of wetland will be impacted by the project. Another 0.26 acres of impact was previously authorized on site for a cumulative total of 0.56 acres. The property's remaining undeveloped wetland will remain undeveloped and be preserved in perpetuity as open space to address state and local requirements.

UTM GRID COORDINATES N: 4839400 E: 397400 USGS QUAD: PORTLAND WEST, ME

I. STATE ACTIONS: PENDING [ ], ISSUED [ X ], DENIED [ ] DATE 12/14/99

LEVEL OF STATE REVIEW: PERMIT BY RULE: TIER 1: TIER 2: X TIER 3: (NRPA)

II. FEDERAL ACTIONS:

DATE STATE FILE REVIEWED: 11/18/99 (PGP JP MEETING)

LEVEL OF CORPS REVIEW: CATEGORY 1: CATEGORY 2: X

AUTHORITY: SEC 10 404 X 10/404 103

EXCLUSIONS: The exclusionary criteria identified in the general permit do/do not apply to this project. (circle one)

ESSENTIAL FISH HABITAT (EFH): EFH PRESENT Y (N) (CIRCLE ONE)

IF YES: Based on the terms and conditions of the PGP, which are intended to ensure that authorized projects cause no more than minimal environmental impacts, the Corps of Engineers has preliminary determined that this project will not cause more than minimal adverse effects to EFH identified under the Magnuson-Stevens Fisheries Conservation and Management Act.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO USF&WS NO NMFS NO

CORPS DETERMINATION:

We have determined that your project as proposed and as shown on the plans submitted to the Corps is eligible under the State of Maine Programmatic General Permit. Accordingly, other than possibly performing a compliance inspection (condition 22 of the permit) at some later date, we do not plan to take any further action on this project.

Please note that all work is subject to the conditions contained in the general permit and any additional special conditions listed on any attached sheets. No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained.

ADDITIONAL SPECIAL CONDITIONS ATTACHED: YES (X) NO (CIRCLE ONE)

If you have any questions on this matter, please contact Shawn Mahaney or Rod Howe of my staff at 207-623-8367 at our Manchester, Maine project Office.

*Jay L. Clement*  
 JAY L. CLEMENT  
 SENIOR PROJECT MANAGER  
 MAINE PROJECT OFFICE

*David H. Killooy* 12/29/99  
 DAVID H. KILLOY, P.E., C.P.G. DATE  
 CHIEF, PERMITS & ENFORCEMENT SECTION  
 REGULATORY BRANCH



**ADDITIONAL SPECIAL CONDITIONS FOR  
DEPARTMENT OF THE ARMY  
PROGRAMMATIC GENERAL PERMIT  
NO. 199902985**

No additional filling of waters of the United States (wetlands or waterways) for lot development is authorized without written approval from the Corps. The permittee shall record this permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The permittee shall provide the Corps with a copy of the recording.

November 15, 1999

To: Kandi Talbot  
From: Pines of Portland, Inc.  
Re: Pines Subdivisions – Mylars/Revisions

Dear Kandi:

Please find the enclosed mylars for signature by the Planning Board as well as the (7) copies requested.

Based on discussions with D.E.P. and Tony Lombardo, the hammerheads were changed at the end of Liberty Way. A copy of the revised engineering plan has been submitted to Tony Lombardo.

Based on the 10-12-99 Planning Board meeting, the conditions of approval have been included on the plans as follows:

- 1.) "Street frontage variance received" has been removed.
- 2.) DRC's memo of 10/1/99 as appropriate:
  - a.) Note added to plan regarding pre-blast survey.
  - b.) MEDEP approvals for ditch crossing and small fill area at end of Kansas Ave forthcoming.
  - c.) Additional erosion control measures provided by Pinkham & Greer.
  - d.) Sewer depth on Liberty Way was raised to about 14'.
- 3.) Plans revised per public works memo of 10/5/99.
- 4.) All drainage easements are labeled either "public" or "private" and easement widths revised as requested.
- 5.) Note added regarding sale of Lot 24.
- 6.) Building envelope revised for Lot 18.
- 7.) Note added regarding Section I and Section II for Sectional Recording purposes.

Thursday

ask about  
alex

We have also developed an informational form to be used to document existing basement water conditions of applicable homes along Virginia Ave. This evaluation will be completed in consultation with DRC, Mr. Steve Bushey, as requested.

Sincerely,



Gregory T. McCormack / Amy K. Mulkerin  
Pines of Portland, Inc



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.  
GOVERNOR

MARTHA KIRKPATRICK  
COMMISSIONER

October 13, 1999

Alan Burnell  
Pinkham & Greer  
170 US Route One  
Falmouth ME 04105

RE: The Pines

Dear Alan:

Thank you for submitting A&G Associates Natural Resources Application permit for The Pines in Portland. After reviewing the packet I have determined that it is unacceptable for processing at this time. Please make the following changes prior to resubmitting the application:

1. The application does not explain why a Tier 3 application has been submitted. Alex Wong, of this office, tells me that he spoke with you over the phone and that cattails are present on site. Please show the location and size of cattail wetlands/open water on the plans.
2. Full size, detail plans must be submitted with this application. The plans must clearly show past impacts and proposed impacts. Plans must also show cross sections of proposed fill (Exhibit 6). Erosion control must also be detailed on a plan (Exhibit 8).
3. Wetland delineation logs must be submitted with this application.
4. The functional assessment included in this application is for a project titled, "Winchester Estates". Please submit the correct functional assessment.
5. Part two of the application must be completed, including a detailed alternatives analysis, site description, functional assessment, and compensation plan. Please note that alterations greater than 500 square feet in freshwater wetlands of special significance (wetlands containing greater than 20,000 square feet of open water or emergent vegetation) require compensation, unless the Department determines that the proposed alteration will not cause a wetland function or functions to be lost or degraded as identified by the functional assessment. The alternatives analysis does not address the issues suggested in Part two. Also, the Department has stated that the only projects in wetlands of special significance that do not have a practicable alternative are limited to: health & safety projects; crossings by road, rail or utility lines; water dependant uses; expansions to a facility that can not be located somewhere else; mineral excavation; and walkways. Other impacts proposed in wetlands of special significance can not be permitted under the Wetland Protection

Rules (Chapter 310). See Chapter 310, Section 5.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6300

PRESQUE ISLE  
1235 CENTRAL D  
PRESQUE ISLE,  
(207) 764-0477 F

6. List of abutters is absent.

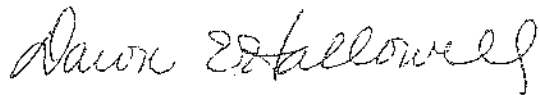
7. The project description states that 254 square feet of fill is required on Kansas Ave for the construction of a riprap pad. Please explain the purpose of the riprap pad.

8. Nine copies of the complete application must be submitted.

9. It has been brought to my attention, that the culvert installed under Penn Avenue with a Permit By Rule is going to act as a restriction for stormwater coming from the proposed development and that ponding may occur behind this culvert in the 25 year storm. Please explain this issue and provide plans illustrating the potential impacts to the wetlands in the area. These impacts may need to be permitted as a wetland alteration, by the Department.

I am returning both copies of the application along with your unprocessed check. Please call me at 822-6300, to schedule a pre-application meeting prior to re-submitting this application.

Sincerely,



Dawn E. Hallowell  
Division of Land Resource Regulation  
Bureau of Land and Water Quality

Cc: A&G Associates



MULKERIN ASSOCIATES  
REAL ESTATE

## FAX COVER SHEET

**Date:** October 5, 1999 3:45P.M.

**Total Pages:** (1)

**To:** Kandice Talbot

**Company Fax #:**

**From:** Pines of Portland

**Subject:** Review Comments

Tom Greer of Pinkham and Greer Engineers has agreed to make suggested changes to his engineering drawings and will submit to your office ASAP.

Also, he is submitting a letter to address Steve Bushey's comments.

Upon my review of NRPA permits, I noticed the absence of a small section at the end of Kansas Ave. which needs to be submitted. This will be done tomorrow and the complete NRPA package will be dropped off to your office.

Greg McCormack

**CALL US AT 772-2127 IF THERE ARE ANY PROBLEMS.**

428 Forest Avenue, Portland, ME 04101  
207-772-2127 Fax: 207-871-9695

October 5, 1999

To: Portland Planning Board

From: Pines of Portland, Inc.

Re: Kansas Ave. Extension

At our last planning board workshop, discussion was held concerning a request by planning staff to upgrade approximately 250' of existing Kansas Ave. roadway.

Since this request would be an off-site improvement, the (4) board members in attendance expressed a willingness to drop this planning staff request as long as Pines of Portland would be responsible should any damage occur, except normal wear and tear to this section during development activities in this area.

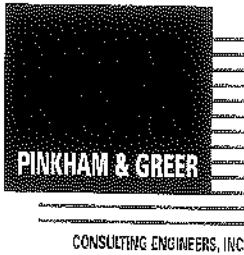
Please allow this letter, along with enclosed photos of the current road and its condition, taken October 5, 1999, to serve as evidence of our acceptance, as well as responsibility, to maintain the existing 250' section of Kansas Ave. in its current condition, normal wear and tear excepted, during the duration of our construction activities along Kansas Ave. If it is determined that the Pines of Portland or its subcontractors have caused damage beyond normal wear & tear, we are in agreement to repair such damages as determined by a review by the Public Works Dept. of the City of Portland.

Based on a discussion with the Director of Public Works on September 30 on a related matter, it would be noteworthy for the board to know, that in the Director's opinion, equipment and vehicles commonly used in residential construction typically pose no risk of damage to roadways.

Sincerely,

  
Pines of Portland, Inc.





170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

September 22, 1999  
File: 98113

Alex Jaegerman  
City of Portland  
City Hall  
Portland, Maine

RE: The Pines of Portland

Dear Alex:

On Friday September 17 and Monday September 20, visits were made to Virginia Street between Kansas Avenue and Penn Avenue for the purpose of interviewing residents regarding basement water problems during rain events. This was done in response to comments made at the public hearing and by you to try to determine the effect that development of "The Pines" will have on these conditions. Additionally, textures of fill and underlying native soils were determined in several areas utilizing a hand auger. The wetland boundary as it was related to the impacted lots was also noted and sketched on a plan. A copy of that sketched wetland boundary has been included as part of this report.

Results of these observations and site visits are as follows:

The underlying native soil material is a very fine marine sediment that contains from 35-55% clay sized particles (<2 mm in size) and has an estimated permeability of 0.2" per hour

Most of the lots have had from 2.5 to 4 feet of moderately well drained coarse structural fill (estimated permeability of 6" per hour) added over the top of the native soil in the immediate area of the houses. Most all of this area was at one time part of the existing wetland.

Basement flooding, for those basements that do flood, occurs during most rain storms not just large storm events

The pattern of basement flooding problems is random as Virginia Street residents at #157 and #141 indicated frequent problems but #151 and #161 did not appear to have any problems.

January 21, 2000

To: Mr. Lee D. Urban  
Director of Economic Development

From: Pines of Portland, Inc.

Re: Timing of Payment of 1.7% Inspection Fees for various roads to be constructed in the Pines Development

Dear Mr. Urban:

Our development of The Pines is essentially divided into three sections: 1.) Penn Avenue and Liberty Way, 2.) Kansas Avenue and 3.) Wyoming Ave. Three separate letters of credit have been approved by the City of Portland in the following amounts:

1.) Penn Avenue and Liberty Way	\$304,000.00
2.) Kansas Avenue	\$ 94,000.00
3.) Wyoming Avenue	\$147,700.00

We have applied for a building permit on Lot 20 Kansas Avenue and need to have this issued A.S.A.P.

Kandi Talbot of the Planning Staff has requested that we deposit the 1.7% fee for the entire project even though there will be no construction activities to inspect until early March in the case of Penn Avenue/Liberty Way section; Wyoming Avenue construction may be a year or two away.

We are not in a position to tie up such a large amount of money for no purpose whatsoever.

I have enclosed a copy of the notice to Developers dated March 1997 which states that the 1.7% fee must be [submitted prior to the issuance of any building permit for the **AFFECTED DEVELOPMENT.**]

We are proposing to immediately pay a fee of 1.7% of \$94,000 (\$1598) for the construction inspection fee of Kansas Avenue and pay the required fee of (\$5168) for Liberty Way/ Penn Avenue the first of March; prior to our actual start of any construction activity. Wyoming fee would be paid prior to the start of any construction, as well.





September 9, 1999

To: Kandice Talbot  
From: Greg McCormack  
Re: Significant, endangered or threatened wildlife species; The Pines Project


Dear Ms. Talbot:

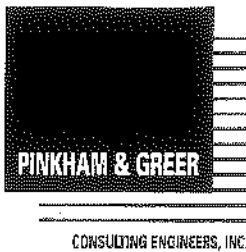
On Tuesday, September 7, 1999, Mr. Warren Eldridge, Regional Wildlife Biologist for the State of Maine, conducted an on-site inspection of all property within the extent of our development call "The Pines".

His field check confirmed that there are no significant, endangered or threatened wildlife species on the property.

Unfortunately, Mr. Eldridge was unable to provide any written documentation as he was going on vacation that same day. He said that he will be able to provide a letter for your files by the end of next week.

Sincerely,

  
Gregory T. McCormack



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

September 9, 1999  
File: 99160

Mr. James Wendel, PE  
DELUCA-HOFFMAN ASSOCIATES  
778 Main Street  
South Portland, ME 04106

RE: DRAINAGE AT THE PINES

Dear Jim:

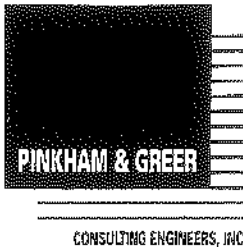
Based on our conversation of 9-8-99 you are satisfied with the drainage analysis except for the outlet conditions assumed for the pond area in the existing conditions. It is your concern that the 10' weir assumed in the existing conditions did not accurately reflect the full flow potential of the stream and wetland area.

I have revised the existing model by adding an additional weir at elevation 68 and one at elevation 71.0. I scaled the width of the 68.0 contour line to obtain the width. This significantly increases the flow capacity of the stream channel and the wetland area. Please note this method approximates the flow but does not consider the stream channel roughness in the analysis. For these conditions and analysis the results I believe are valid. Below is the revised table of flows and elevations of the pond area, as originally presented in my August 9 letter.

Storm Event	Existing		Proposed	
	Elevation	Flow (cfs)	Elevation	Flow (cfs)
2-year	68.4	102.1	69.2	91.51
10-year	69.5	215.5	70.6	153.7
25-year	70.0	279.1	71.1	178.4
100-year	70.4	339.5	72	222.4

Again we significantly reduce the peak flows leaving the site protecting down stream channels. Please note the box culvert is already in place, so we have experience at this location.

We have reviewed the homes along Virginia Street to determine the relative elevations of the lawns and first floors. There are 3 homes adjacent the project that have first floor elevations of 82, 79, and 79. Assuming 8 feet to the basement floor two homes would be at elevation 71.



Mr. James Wendel, PE  
DELUCA-HOFFMAN  
September 9, 1999  
Page 2

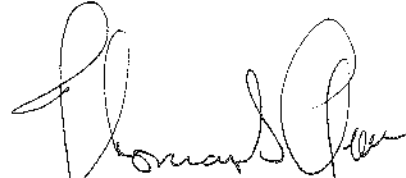
The finish grades around the homes have a low point of 74.4. Approximately 2 feet above the peak elevation of the pond in the 100-year event. It is our opinion that reduced flows from the Wyoming avenue area will minimize the impact to drainage along Virginia Street and that the ponding associated with the Penn Avenue area will not impact the homes along Virginia Avenue.

If these basements flood it is due to groundwater around the home as there is no opportunity to have a positive drain around the foundation. We suspect they rely on sump pumps to handle the infiltration of water around the basements.

Hopefully this provides with the data that you need to be satisfied with the project.

Sincerely,

PINKHAM & GREER



Thomas S. Greer, P/E.

TSG/lh

C: Amy Mulkerin  
Greg McCormack

TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

8 Sep 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 427.3 CFS @ 12.56 HRS, VOLUME= 85.89 AF

Qout= 339.5 CFS @ 12.93 HRS, VOLUME= 85.71 AF, ATTEN= 21%, LAG= 21.8 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 8.87 AF
68.0	.30	.40	.40	PEAK ELEVATION= 70.4 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 13 MIN (84.86 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0
2	P	68.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0
3	P	71.0'	40' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

8 Sep 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 314.8 CFS @ 12.56 HRS, VOLUME= 64.55 AF

Qout= 279.1 CFS @ 12.87 HRS, VOLUME= 64.39 AF, ATTEN= 11%, LAG= 18.3 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 5.88 AF
68.0	.30	.40	.40	PEAK ELEVATION= 70.0 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 11.5 MIN (64.39 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0
2	P	68.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0
3	P	71.0'	40' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

8 Sep 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

POND 10

POND ON SITE

Qin = 245.7 CFS @ 12.59 HRS, VOLUME= 50.70 AF  
 Qout= 215.5 CFS @ 12.94 HRS, VOLUME= 50.56 AF, ATTEN= 12%, LAG= 20.7 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 4.49 AF
68.0	.30	.40	.40	PEAK ELEVATION= 69.5 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 10.8 MIN (50.56 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0
2	P	68.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0
3	P	71.0'	40' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

POND 10

POND ON SITE

Qin = 119.9 CFS @ 12.55 HRS, VOLUME= 23.34 AF

Qout= 102.1 CFS @ 12.91 HRS, VOLUME= 23.25 AF, ATTEN= 15%, LAG= 21.4 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 1.47 AF
68.0	.30	.40	.40	PEAK ELEVATION= 68.4 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 7.1 MIN (23.02 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0
2	P	68.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0
3	P	71.0'	40' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0





Attorneys At Law

September 9, 1999

*Kandi*

Penny Littell, Esq.  
Corporation Counsel's Office  
City of Portland  
Portland City Hall  
389 Congress Street  
Portland, Maine 04101-3509

SEP 09 1999  
3:50 p.m.

E. Stephen Murray  
Peter S. Plumb  
John C. Lightbody  
Thomas C. Newman  
John C. Bannon  
Susan D. Thomas  
Drew A. Anderson  
Richard L. O'Meara  
Barbara T. Schneider  
Christopher B. Branson  
Charles P. Piacentini, Jr.  
Michael D. Traister  
Rita S. Saliba

RE: Pines of Portland

Dear Penny:

Enclosed with this letter are the following draft documents for your review:

**A. Sample quitclaim deed from Pines of Portland, Inc. to each lot owner.**

Please note that this form of the deed applies to the lots on the easterly side of Virginia Street. The deeds to the lots in the Wyoming Avenue phase of the project will be identical, except that those lots will have neither an interest in, nor an obligation to maintain, the common facilities located on the easterly side of Virginia Street.

**B. Conservation easement.**

We propose that the simplest and most effective means to grant the public a right to use the Open Space areas on the easterly side of Virginia Street is by granting the City of Portland a conservation easement over those areas, with third-party enforcement rights to the Maine DEP. The fee interest in the Open Space areas would be shared pro rata by the lots on the easterly side of Virginia Street (excepting the 6 lots off Penn Avenue that have already been conveyed.) We are currently working on a survey description of the area subject to the conservation easement.

Counsel:  
Peter L. Murray  
Charlton S. Smith

75 Pearl Street  
Post Office Box 9785  
Portland, Maine  
04104-5085

Telephone:  
207.773.5651

Facsimile:  
207.773.8023

E-Mail:  
info@mpmlaw.com

WWW:  
mpmlaw.com

September 9, 1999

Page 2

**C. Drainage maintenance agreement.**

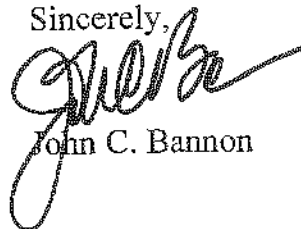
This draft is adapted from the standard form of drainage maintenance agreement given to us by the City. I understand that my clients have already discussed with you and the Planning Department the concept that Pines of Portland, Inc. would drop out of the agreement once 75% of the lots in the Penn Avenue area are sold.

**D. Drainage/utility easement quitclaim deed with covenant.**

This is a simple easement granting the City to construct, repair, and maintain drainage facilities and other utilities within the project. We are currently working on a survey description of the area subject to the conservation easement.

Thank you for your attention to this letter. Please let me know if you have any comments about this letter.

Sincerely,



John C. Bannon

JCB/kh

cc: Mr. Greg McCormack  
Ms. Amy Mulkerin

**QUITCLAIM DEED WITH COVENANT**  
Maine Statutory Short Form

KNOW ALL BY THESE PRESENTS, that **PINES OF PORTLAND, INC.**, a Maine corporation with a principal place of business in the City of Portland, County of Cumberland, State of Maine ("Grantor"), for consideration paid, grants to \_\_\_\_\_, of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_ ("Grantee"), whose mailing address is \_\_\_\_\_, with **QUITCLAIM COVENANT**, the land, together with any buildings thereon, located in Portland, County of Cumberland, and State of Maine and being more particularly described in Exhibit A attached hereto and made a part hereof.

IN WITNESS WHEREOF, the said **PINES OF PORTLAND, INC.** has caused this instrument to be signed and sealed this \_\_\_\_ day of \_\_\_\_\_, 1999.

WITNESS:

PINES OF PORTLAND, INC.

\_\_\_\_\_

By:  
Its:

*Notary Public/Attorney at Law*

STATE OF MAINE  
COUNTY OF CUMBERLAND, SS.

\_\_\_\_\_, 1999

Personally appeared before me the above-named \_\_\_\_\_ and acknowledged the foregoing to be his/her free act and deed in his/her said capacity, and the free act and deed of Pines of Portland, Inc.

\_\_\_\_\_  
Notary Public/Attorney at Law

\_\_\_\_\_  
Printed Name

EXHIBIT A

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine and being shown as Lot \_\_\_ (the "Lot") on a plan entitled "The Pines, Portland, Maine" prepared by Survey, Inc. for Pines of Portland, Inc. dated \_\_\_\_\_, 1999 and recorded in the Cumberland County Registry of Deeds in Plan Book \_\_\_\_\_, Page \_\_\_\_\_ (the "Plan").

Being a portion of the premises conveyed to the Grantor herein by deed of Amy K. Mulkerin and Gregory T. McCormack dated \_\_\_\_\_, 1999 and recorded in said Registry of Deeds in Book \_\_\_\_\_, Page \_\_\_\_\_.

The Lot is conveyed together with an undivided 1/18th interest in the Open Space, surface water drainage areas, culverts, and all other areas and infrastructure depicted as "Common Property" on the Plan.

As record owner of the Lot, Grantee shall automatically become liable for and obligated to pay a 1/18<sup>th</sup> share of the total annual costs of maintaining the Open Space, surface water drainage areas, culverts, and all other areas and infrastructure depicted as "Common Property" on the Plan.

TOGETHER with the right to use in common with others all roads and right of ways as shown on the Plan.

SUBJECT TO the "Declaration of Protective Covenants Affecting Property of Amy K. Mulkerin and Gregory T. McCormack located at the Pines, in the City of Portland, County of Cumberland and State of Maine," dated April 22, 1999, recorded in the Cumberland County Registry of Deeds in Book \_\_\_\_\_, Page \_\_\_\_\_.

SUBJECT TO the following easements which are hereby created:

1. Easements in favor of the Grantor, the City of Portland, appropriate utility and service companies, cable television companies and governmental agencies or authorities for such utility and service lines and equipment as may be necessary or desirable to serve any portion of the Lot or the other lots delineated on the Plan (the "Lots"). The easements created by this Section shall include, without limitation, rights of the Grantor or the City of Portland or the providing utility or service company, or governmental agency or authority to install, lay, maintain, repair, relocate and replace gas lines, pipes and conduits, water mains and pipes, sewer and drain lines,

drainage ditches and pump stations, telephone wires and equipment, television equipment and facilities (cable or otherwise), electrical wires, conduits, and equipment and ducts and vents over, under, through, along and on the Lot. Notwithstanding the foregoing provisions of this Section, any such easement through a Lot shall be located either in substantially the same location as such facilities or similar facilities existed at the time of first conveyance of the Lot by the Grantor, or so as not to materially interfere with the use or occupancy of the Lot by its occupants.

2. The Grantor reserves for as long as it owns any of the Lots, an easement on, over, and under those portions of the Lot not located within a building for the purpose of maintaining and/or correcting drainage of surface water in order to maintain reasonable standards of health, safety and appearance. The easement created herein expressly includes the right to cut any trees, bushes, or shrubbery; to grade the soil; or to take any other action reasonably determined to be necessary. The Grantor shall restore the affected property as closely to its original condition as is practicable.

3. An easement in favor of the Grantor, and the agents, employees and independent contractors thereof, for the purpose of the inspection, upkeep, maintenance, repair and replacement, if applicable, of the Lots and any improvements and fixtures located thereon, pursuant to its rights to enforce the provisions of any of the easements set forth herein.

All easements, rights and restrictions described and mentioned herein are easements appurtenant and running with the land, the Lot and the Lots.

The Open Space shown on the Plan is subject to a conservation easement granted to the City of Portland and the Maine Department of Environmental Protection dated \_\_\_\_\_, 1999, and recorded in said Registry of Deeds in Book \_\_\_\_\_, Page \_\_\_\_\_.

SUBJECT TO all notes, easements, restrictions, covenants and matters as shown on the Plan.

Date of the  
Grant of the  
Municipal Easement

CONSERVATION EASEMENT

**PINES OF PORTLAND, INC.**, a Maine corporation with a principal office in Portland, Cumberland County, Maine (hereinafter referred to as the "Grantor," which word is intended to include, unless the context clearly indicates otherwise, the above-named Grantor, its successors and assigns, and any successors in interest to the Protected Property),

GRANT as a gift to **THE CITY OF PORTLAND**, a Maine municipal corporation located in Cumberland County, Maine, (hereinafter referred to as the "Holder", which word shall, unless the context clearly indicates otherwise, include the Holder's successors and/or assigns);

with QUITCLAIM COVENANT, in perpetuity, the following described CONSERVATION EASEMENT on land in Portland, Cumberland County, Maine, hereinafter referred to as the "Protected Property," being more particularly described on Exhibit A attached hereto and made a part hereof by reference; and

GRANTS as a gift to the **MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION**, an agency of the State of Maine located in Kennebec County, Maine, (hereinafter referred to as the "Third-Party," which word shall, unless the context clearly indicates otherwise, include the Third-Party's successors and/or assigns), a third-party right to enforce the following CONSERVATION EASEMENT:

The Conservation Easement on the Protected Property is granted exclusively for the following conservation purposes:

**PURPOSE**

*It is the purpose of this easement to provide significant public benefit by protecting and preserving forever the Protected Property in a substantially undeveloped state for wildlife habitat and open space purposes.*

The following recitals more particularly describe the conservation values of the Protected Property and the significance of this grant.

WHEREAS, the Protected Property consists of land within an area of the City of Portland which has been subject to significant and increasing development pressures; and

WHEREAS, the Protected Property will remain in a substantially undeveloped natural state, suitable for wildlife habitat, open space, and limited public recreation; and

WHEREAS, the State of Maine has recognized the importance of preserving scenic open space in its Constitution at Article IX, Section 8, and by virtue of the "Farm and Open Space Tax Law" at Title 36 M.R.S.A. Section 1101 et seq., which confers preferential property tax treatment for property that owners keep undeveloped and available for open space uses, particularly land preserved by conservation easement; and

WHEREAS, this Indenture provides limitations on the use of the Protected Property to preserve in perpetuity the integrity of the wetlands and forest ecosystem and the traditional and scenic appearance of the landscape when viewed from public roads; and

WHEREAS, development of the Protected Property beyond that permitted in this Conservation Easement would have an adverse effect on the visual aspect of the Protected Property as seen by the general public, on the purity of the air, water, and the environment in and around the Protected Property, and on the maintenance of the Protected Property as a specific and natural area and as a suitable habitat for indigenous flora and fauna; and

WHEREAS, this Indenture is created pursuant to the Uniform Conservation Easement Act at Title 33, Maine Revised Statutes Annotated (1989), Sections 476 through 479-B inclusive, as amended; and

WHEREAS, this Indenture is created pursuant to the Internal Revenue Code of 1986 as amended (hereinafter referred to as the "Code") at Title 26, U.S.C.A., Section 170(h)(1)-(6); and

WHEREAS, the Holder is a governmental body qualified to hold conservation easements pursuant to Title 33, Maine Revised Statutes Annotated (1989), Section 476(2)(A), as amended; and

WHEREAS, the Third-Party is a governmental body that would be eligible to hold conservation easements pursuant to Title 33, Maine Revised Statutes Annotated (1989), Section 476(2)(A), as amended;

NOW THEREFORE, the Conservation Easement on the Protected Property consists of the following terms, covenants, restrictions and affirmative rights granted to Holder and Third-Party, which shall run with and bind the Protected Property in perpetuity:

**1. LAND USE.**

The Protected Property may be used only for conservation and low-impact outdoor recreation that does not adversely affect its natural character. No commercial, residential, industrial, quarrying or mining activities, camping, picnicking, fires, hunting, concerts, performances, public gatherings, or use of motorized vehicles of any kind are permitted on the Protected Property. There shall be no improvements, structures, docks, fixtures or equipment erected or constructed on the Protected Property.

**2. SUBDIVISION.**

The Protected Property must remain in its present configuration as an entity, as described in Exhibit A, and may not be divided, subdivided, partitioned or otherwise conveyed into separate ownership except that any portion of the Protected Property may be conveyed to an entity described in Paragraph 9(d), to be held in conservation ownership.

**3. VEGETATION MANAGEMENT.**

In order to maintain the historic use of the Protected Property consistent with conservation purposes of this grant, vegetation that maintains and enhances wildlife habitat shall be encouraged and allowed to grow on the Protected Property. Holder shall not remove vegetation from the Protected Property. Holder may maintain the existing open areas on the Protected Property, and may selectively cut, prune, and plant vegetation in order to preserve the scenic and natural character of the Protected Property; provided that all such vegetation management activities must be conducted in a manner that maintains the healthy ecosystem and scenic character of the Protected Property.

**5. WASTE DISPOSAL AND HABITAT PROTECTION.**

- a) It is forbidden to dispose of or to store rubbish, garbage, debris, unserviceable automobiles or equipment parts thereof, or other unsightly, offensive, toxic or hazardous substances or waste material on the Protected Property; except that vegetative waste may be composted or used on the Protected Property and other waste generated by permitted uses on the Protected Property may be stored temporarily in appropriate containment for removal at reasonable intervals, subject to all applicable local, state and federal laws and regulations.
- b) The use of herbicides, insecticides, fungicides, fertilizers, biocides or other chemical substances, as well as the use or disposal of agricultural products and by-products must be limited so as not to have a demonstrable adverse effect on the waters or wildlife habitat associated with the Protected Property.

6. **NOTICES.**

- a) Any notice to Holder required hereunder must be made by certified mail, return receipt requested, addressed to: The City of Portland, ATTN: City Manager, 389 Congress Street, Portland, Maine 04101, or to such other authorized person and address hereafter designated in writing by Holder.
- b) Any notices to Holder or requests for Holder consent, required or contemplated hereunder, must include, at a minimum, sufficient information to enable Holder to determine whether proposed plans are consistent with the terms of this Conservation Easement and the conservation purposes hereof.

7. **DISPUTES, AFFIRMATIVE RIGHTS OF HOLDER AND THIRD-PARTY.**

- a) Holder and Third-Party have the right to enter the Protected Property for inspection and enforcement purposes, at reasonable intervals that respect Grantor's privacy, at a reasonable time and in a reasonable manner, consistent with the conservation purposes hereof.
- b) Holder and Third-Party have the right to require that Grantor's reserved rights be exercised in a manner that avoids unnecessary harm to the conservation values to be protected by this Easement.
- c) Holder, Third-Party, and Grantor agree that any controversy or dispute that may arise under this Agreement shall be submitted to mediation, to be conducted by a mediator mutually agreeable to Holder, Third-Party, and Grantor. In the event that Holder, Third-Party, and Grantor are unable to agree upon a mediator or otherwise fail to resolve their dispute through mediation, then Holder, Third-Party, or Grantor may demand arbitration pursuant to the Maine Arbitration Act, 14 M.R.S.A. §§ 5927-5949. All issues which may in any manner relate to the controversy or dispute shall be resolved in the arbitration, except that either party may seek security from an appropriate court for any award or judgment which that party may obtain in arbitration, where the security is sought through a motion for approval of attachment, an attachment on trustee process, an injunction or otherwise.
- d) In the event that any dispute between the parties is resolved by mediation, then each party shall bear its own costs with regard to the mediation.

8. **GRANTOR'S RESERVED RIGHTS.**

Grantor reserves the right to make any and all lawful uses of the Protected Property as are consistent with the purposes and terms of this Easement; including, but not limited to, using the Protected Property as part of a surface water drainage and/or retention system servicing properties abutting or near the Protected Property. \*

9. **CONSERVATION EASEMENT REQUIREMENTS UNDER MAINE LAW AND U.S. TREASURY REGULATIONS.**

- a) This Conservation Easement is created pursuant to The Uniform Conservation Easement Act at Title 33, Maine Revised Statutes, 1989, Sections 476 through 479-B, inclusive, as amended, and shall be construed in accordance with the laws of the State of Maine.
- b) This Conservation Easement is established exclusively for conservation purposes pursuant to the Internal Revenue code of 1986 as amended (hereinafter referred to as the "Code") at Title 26, U.S.C.A., Section 170(h)(1)-(6) and Sections 2055 and 2522 and under Treasury Regulations at Title 26 C.F.R. §1.170A-14 et seq., as amended.
- c) The Holder and Third Party are qualified to hold conservation easements pursuant to Title 33, Maine Revised Statutes Annotated, 1988, Section 476(2)(A), as amended.



- d) This Conservation Easement is assignable, but only to an entity that satisfies the requirements of Code Section 170(h)(3) (or successor provisions thereof) and the requirements of Section 476(2) of Title 33 of the Maine Revised Statutes Annotated (1989), as amended (or successor provisions thereof), and that as a condition of transfer, agrees to uphold the conservation purposes of this grant.
- e) Grantor agrees to notify Holder and Third-Party prior to undertaking any activity or exercising any reserved right that may have a material adverse effect on the conservation purposes of this grant. Grantor has the right to use the Protected Property as collateral to secure the repayment of debt, provided that the right of the Holder and Third-Party to enforce the terms, restrictions and covenants created under this Easement shall not be extinguished by foreclosure of any mortgage or any publicly or privately placed lien, regardless of date. The restrictions of this Conservation Easement and Holder's and Third-Party's right to enforce them shall be superior to any mortgage or lien, except with respect to Holder's and Third-Party's right to monetary damages based upon a violation that occurs subsequent to recording of such mortgage or lien. Holder and/or Third-Party may execute a limited subordination to this effect upon request by Grantor.
- f) This Conservation Easement constitutes a property right owned by the Holder. Notwithstanding that this Conservation Easement is an obligation and not a financial asset, should it be extinguished, which may be accomplished only by court order, Holder is entitled to a share of the proceeds of any sale, exchange or involuntary conversion of the unrestricted property, according to Holder's proportional interest in the Protected Property as determined by Treasury Regulations 1.170-A-14(g)(6)(ii). Holder's proportional interest is determined as of the date of this grant and will not include value attributable to improvements to the Protected Property made after the date of this grant. Holder agrees to use such proceeds for its conservation purposes.

10. GENERAL PROVISIONS.

- a) The failure or delay of the Holder and/or Third Party, for any reason whatsoever, to enforce this Conservation Easement shall not constitute a waiver of their rights.
- b) If any provisions of this Conservation Easement or the application of any provision to a particular person or circumstance is found to be invalid, the remainder of this Conservation Easement and the application of such provision to any other person or any other circumstance, shall remain valid.

TO HAVE AND TO HOLD the said Conservation Easement unto the said Holder and Third-Party, their successors and assigns forever.

IN WITNESS WHEREOF, the Grantor, Pines of Portland, Inc., through its undersigned representative, hereunto sets its hand and seal this \_\_\_\_ day of \_\_\_\_\_, 1999; Holder has caused this instrument to be accepted, sealed and executed in its name by its City Manager; and Third-Party has caused this instrument to be accepted, sealed and executed in its name by its Commissioner.

Signed, sealed and delivered  
in the presence of:

PINES OF PORTLAND, INC

By \_\_\_\_\_  
Its

THE CITY OF PORTLAND

By: \_\_\_\_\_  
Its City Manager

THE STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

\_\_\_\_\_

By: \_\_\_\_\_  
Its Commissioner

STATE OF MAINE  
COUNTY OF CUMBERLAND, ss. \_\_\_\_\_, 1999

Then personally appeared the above-named \_\_\_\_\_, as aforesaid \_\_\_\_\_ of the Pines of Portland, Inc. who acknowledged the foregoing instrument to be his/her free act in his/her capacity and the free act and deed of said corporation.

Before me,

\_\_\_\_\_  
Notary Public/Attorney at Law  
My commission expires: \_\_\_\_\_

STATE OF MAINE  
COUNTY OF CUMBERLAND, ss. \_\_\_\_\_, 1999

Then personally appeared the above-named \_\_\_\_\_, as aforesaid City Manager of the City of Portland, and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity and the free act and deed of said municipal corporation.

Before me,

\_\_\_\_\_  
Notary Public/Attorney at Law  
My commission expires: \_\_\_\_\_

STATE OF MAINE  
COUNTY OF CUMBERLAND, ss. \_\_\_\_\_, 1999

Then personally appeared the above-named \_\_\_\_\_, as aforesaid Commissioner of the Maine Department of Environmental Protection, and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity and the free act and deed of said Department.

Before me,

\_\_\_\_\_  
Notary Public/Attorney at Law  
My commission expires: \_\_\_\_\_



**EASEMENT QUITCLAIM DEED WITH COVENANT**  
Maine Statutory Short Form

**PINES OF PORTLAND, INC.**, owner of property located off Virginia Street in the City of Portland, County of Cumberland and State of Maine ("Grantor"), for consideration paid, hereby grants to **THE CITY OF PORTLAND**, a municipal corporation organized under the laws of Maine, with a principal office in the City of Portland, County of Cumberland, and State of Maine, its successors and assigns ("Grantee"), an easement in perpetuity, with **QUITCLAIM COVENANT**, over the land located in the City of Portland, County of Cumberland, and State of Maine and being more particularly described in Exhibit A attached hereto and made a part hereof.

With the right to enter onto the Property with people, vehicles, equipment, and machines: to construct, repair and maintain drainage facilities; to lay, re-lay, maintain, repair, relocate, remove or replace drainage swales, underground conduits, pipelines, or pipes with all necessary fixtures and appurtenances for said drainage facilities; to grade the Property to such extent as in the judgment of Grantee is necessary for the above purposes; and to clear the Property and to trim, cut down and remove shrubs, trees and other vegetation on the Property to such extent as in the judgment of Grantee is necessary for the above purposes.

Grantor agrees for itself, its successors and assigns not to construct, erect, or cause to be constructed or erected any building or structure within the limits of the easement herein conveyed.

IN WITNESS WHEREOF, the said Pines of Portland, Inc. has caused this instrument to be signed and sealed this \_\_\_\_ day of \_\_\_\_\_, 1999.

WITNESS

**PINES OF PORTLAND, INC.**

\_\_\_\_\_

By: \_\_\_\_\_

Its:

STATE OF MAINE  
CUMBERLAND, ss

\_\_\_\_\_, 1999

Personally appeared before me the above-named \_\_\_\_\_ as aforesaid  
\_\_\_\_\_ of Pines of Portland, Inc. and acknowledged the foregoing instrument to be  
his/her free act and deed and the free act and deed of Pines of Portland, Inc.

Before me,

\_\_\_\_\_  
Notary Public/Attorney-at-Law

\_\_\_\_\_  
Print Name

## DRAINAGE MAINTENANCE AGREEMENT

IN CONSIDERATION OF subdivision approval granted by the Planning Board of the City of Portland to a plan entitled "The Pines, Portland, Maine" dated \_\_\_\_\_, 1999 and recorded in the Cumberland County Registry of Deeds in Plan Book \_\_\_\_, Page \_\_\_\_, and the drainage plan therefore, filed with the City of Portland, Department of Public Works, 55 Portland Street, Portland, Maine, a copy of which is attached hereto as Exhibit 1, and pursuant to a condition thereof, **PINES OF PORTLAND, INC.**, a Maine corporation with a place of business at Portland, Maine, the owner of the subject premises (the "OWNER"), does hereby agree, for itself, its successors, grantees, and assigns, as follows:

That it will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the surface water drainage system as shown on said plan, including but not limited to the culvert to be installed beneath Penn Avenue just easterly of Lots 3 and 4 as shown on said plan, for the benefit of the said City of Portland, all persons in lawful possession of said premises and abutters thereto; further, that the said City of Portland, said persons in lawful possession and said abutters, or any of them, may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the OWNER, its successors, grantees, or assigns, as the case may be, written notice and a reasonable time to perform, the said City of Portland may, by its authorized agents or representatives, enter upon said premises or any portion thereof for the purpose of performing the aforesaid maintenance of said surface water drainage system in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the OWNER, its successors, grantees, or assigns, as the case may be, upon demand.

This Agreement shall not confer upon the said City of Portland or any other person the right to utilize said surface water drainage system for public use or for the development of any other property, and the OWNER, its successors, grantees, and assigns shall bear no financial responsibility by virtue of this Agreement for enlarging the capacity of said surface water drainage system for any reason whatsoever.

This Agreement shall run with the land and be binding upon the OWNER, its successors, grantees, and assigns as their interests may from time to time appear; provided, that this Agreement shall bind the Pines of Portland, Inc. itself only so long as Pines of Portland, Inc. retains ownership of at least 25% of the Lots numbered 1 through 18 shown on said plan, after which time Pines of Portland, Inc. shall be relieved of all obligations under this Agreement.

Dated at Portland, Maine this \_\_\_\_ day of \_\_\_\_\_, 1999.

PINES OF PORTLAND, INC.

By \_\_\_\_\_  
Its \_\_\_\_\_

STATE OF MAINE  
CUMBERLAND, sis

\_\_\_\_\_, 1999

Personally appeared the above-named \_\_\_\_\_, of \_\_\_\_\_ and acknowledged the foregoing to be his/her free act and deed in his/her said capacity, and the free act and deed of said Pines of Portland, Inc.

Before me,

\_\_\_\_\_  
Notary Public/Attorney-at-Law

\_\_\_\_\_  
Print Name

**IFW**

Tuesday, August 17, 1999

Ms. Amy Mulkerin  
426 Forest Avenue  
Portland, Maine

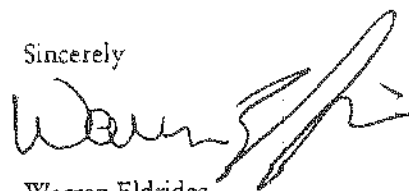
RE: Records of Significant, Critical Wildlife Habitats-The Pines-Portland

Dear Ms. Mulkerin:

I have checked our wildlife resource files for this site. In keeping with the earlier map I sent you on this project, we have no records of any critical or significant wildlife habitats associated with this site.

If you have additional questions, feel free to contact me at 657-2345, ext. 109.

Sincerely



Warren Eldridge  
Asst. Regional Wildlife Biologist

Fax

Post-it® Fax Note	7671	Date	8/17/99	# of pages	▶ 1
To	AMY MULKERIN	From	WARREN ELDRIDGE		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #		Fax #			



August 17, 1999

To: Mr. Alex Jaegerman  
From: Greg McCormack  
Re: Pines Submission Requirements  
a. Conceptual grading plans  
b. Paving of entire street frontage

Dear Alex:

Prior to our revised submission of the Pines we would like to propose the following for your review:

- a. We realize avoidance of drainage problems for individual lots is of primary concern not only to the City of Portland but we as developers. Our unique plans and building footprints make it extremely difficult to pre-design drainage patterns. Furthermore, most of the lots' sloping topography will allow for quick run-off of any surface water. As an alternative to providing individual grading plans at this time, we would propose to add the following note to the plan as well as each individual lot deed:

"An easement is reserved by the developer for every lot and common area on, over and under those portions of the property not located within a building for the purpose of maintaining and/or correcting drainage of surface water."

Please also be advised that the topographical information shown has been generated by field work on site, not aerial photography

- b. Because of our need to start construction as soon as possible, we are going to adjust lot lines to avoid the street vacation process. The planning staff's memo indicates that we must wait for the streets to be vacated prior to release of the plat. We cannot wait for this additional review process.

Two lots still would require street vacation (see enclosed plan). We would propose that lot 18 and a lot at the end of Kansas Avenue be labeled as "not to be sold until street vacated or street frontage improved to city zoning requirements".

Could you please call at your earliest convenience to discuss these two items. Thank you.

Sincerely,



Gregory T. McCormack

Cc: Jim Wendel  
Kandi Talbot



CONSULTING ENGINEERS, INC.

The wetland that is located to the east of Virginia Street is formed by its location in a lower position of the topography and the occurrence of the impermeable marine sediment which causes the water to pond on the surface and collect in the low spots. The water is literally perched on the marine sediment layer and flows in a down gradient direction that most generally follows the slope of the overlying land. This is away for the Virginia Street homes, toward the area of "The Pines".

According to storm water modeling of "The Pines" development, the current 100 year flood elevation is 70.4. After proposed build out of this development, 100 year peak flood elevations will be 72.0. for an approximate 4 hour duration. Since the permeability of the soil is 0.2" per hour and the homes are hydraulically up gradient it is unlikely the water at elevation 72 will cause increased basement flooding at Virginia Street.

The basement flooding at Virginia Street most likely occurs as follows: The overlying coarse fill material becomes saturated with surface and rainwater. The finer textured marine sediment that is below has a very slow permeability so the water becomes perched and flows through the fill and on top of the marine soil layer. It will continue to flow down gradient and outlet either in the wetland, if unobstructed, or into a lower "pocket" if it encounters one, in this case a basement area. This is why basements flood during nearly every rain event. The coarse fill material quickly saturates, causing the water to start flowing down gradient and into the backfill material around the basement. One resident also noted that the catch basin and pipe crossing Virginia Street at Nevada Ave. is full of sediment and the existing ditch near Kansas Ave. needs cleaning. Hopefully the city can attend to this issue quickly.

Sincerely,

PINKHAM & GREER

A handwritten signature in black ink, appearing to read "Alan L. Burnell".

Alan L. Burnell  
CSS #417; SE 267



**CITY OF PORTLAND**

11 August 1999

Mr. Gregory T. McCormack,  
Mulkerin Associates Real Estate,  
426 Forest Avenue,  
Portland, Maine 04101

**RE: Sanitary Sewer Capacity of the City Sewer System and the Portland Water District Sewage Treatment Facilities to Handle Anticipated Wastewater Flows, from the Proposed "Pines of Portland" Subdivision, at Kansas Avenue.**

Dear Mr. McCormack:

Both the existing eight inch diameter sanitary sewer pipe, in Kansas Avenue, and the Portland Water District sewage treatment facilities, located off Marginal Way, have adequate capacity to transport and treat the anticipated wastewater flows of 1,260 GPD, from your proposed subdivision, to be built at #80-#94+/- Kansas Avenue, City of Portland.

<u>Anticipated Wastewater Flows from the Proposed Subdivision</u>	
Two Proposed Three-Bedroom Houses @ 270 GPD/Dwelling	= 0,540 GPD
Two Proposed Four-Bedroom Houses @ 360 GPD/Dwelling	= 0,720 GPD
<b>Total Proposed Increase in Wastewater Flows for this Project</b>	<b>= 1,260 GPD</b>

If I can be of further assistance, please call me at 874-8832.

Sincerely,  
**CITY OF PORTLAND**  
*Frank Brancely*  
Frank J. Brancely, BA, MA  
Senior Engineering Technician

FJB

- cc: ✓ Joseph E. Gray, Director, Department of Planning & Urban Development, City of Portland
- Kandi Talbot, Planner, Dept. of Planning & Urban Development, City of Portland
- Katherine A. Staples, PE, City Engineer, City of Portland
- Bradley A. Roland, PE, Environmental Projects Engineer, City of Portland
- Anthony W. Lombardo, PE, Project Engineer, City of Portland
- Stephen K. Harris, Assistant Engineer, City of Portland
- Desk File



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

file 98-199

ANGUS S. KING, JR.  
GOVERNOR

MARTHA KIRKPATRICK  
COMMISSIONER

AUG 17 1999

August 9, 1999

John C. Bannon, Esq.  
Murray, Plumb & Murray  
75 Pearl Street  
Post Office Box 9785  
Portland, Maine 04104-5085

Re: Pines of Portland development, Portland.

I am writing in response to your request for an advisory opinion concerning the applicability of the Site Location of Development Law (Site Law), 38 M.R.S.A. 481-490, to a division of land on Virginia Street in Portland. Based upon your letter dated August 5, 1999 with reduced copies of plans (previously emailed), a letter of August 6, 1999, with a full plan, and a phone conversation with Penny Littell, Esq., the Site Law may not apply. The facts as I understand them are as follows.

1. Your clients, the Pines of Portland, own land on either side of Virginia Avenue. Virginia Avenue was constructed prior to January 1, 1970. Six lots are proposed on the west side of Virginia Avenue, within a parcel of approximately 2.69 acres.
2. The eastern parcel includes 30.1 acres. Seventeen lots are proposed. Although the full-sized plan shows areas marked in orange, but not also in red, as "to be retained", my understanding is that part or all of these areas will be included in the aggregate area of the subdivision as part of the final plan. For example, this area includes part of the stormwater management system for the lots. However, at least the 18,000 sq. ft. area marked in blue is firmly intended to be retained.
3. The plan will specify the 18,000 sq. ft. area as to be retained, with no lot number.
4. Neither Pines of Portland nor those making up that organization own or have owned any other land in the immediate vicinity.

Virginia Avenue is considered to create two separate parcels. The project size on the west side is insufficient to require review pursuant to the Site Law as a subdivision.

It is assumed that all lots in the subdivision on the east side will be for single-family, detached residential housing, common areas, or open space.

If the 18,000 sq. ft area is retained as proposed, the total project cannot exceed 30 acres. Therefore, review pursuant to the Site Law as a subdivision is not required.

Thank you for checking concerning the applicability of the Site Law.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6300

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 764-1587

Page 2, Letter to Mr. John C. Bannon, Esq.

This opinion is based upon the information provided and is subject to change if that information is incorrect or incomplete. Other federal, state, or local requirements may apply. No opinion is given concerning the applicability of the Natural Resources Protection Act or Stormwater Management Law.

Please feel free to contact me if you have further questions.

Sincerely,



Hetty L. Richardson (287-7799)  
Policy and Planning Unit  
Bureau of Land and Water Quality

cc: Will Cook, Marybeth Richardson (DEP); Penny Littell, Esq. (City of Portland)



CONSULTING ENGINEERS, INC.

170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

August 9, 1999  
File: 99160

Mr. Jim Wendel, PE  
DELUCA-HOFFMAN ASSOCIATES  
778 Main Street  
South Portland, ME 04106

RE: The Pines Stormwater Analysis

Dear Jim:

We have revised the drainage analysis to reflect the actual contours shown on the master plan for the pond area. This allows us to predict the pond elevations before the 4 x 6 culvert was installed and compare them with the current conditions. Below is a table of results for your review and attached are the revised calculations for just Pond 10. Please note the peak flows are for Pond 10 not the Point of Analysis below the site.

Storm Event	Existing		Proposed	
	Elevation	Flow (cfs)	Elevation	Flow (cfs)
2-year	68.4	98.6	69.2	91.51
10-year	69.9	199.6	70.6	153.7
25-year	70.3	232.5	71.1	178.4
100-year	71.0	287.7	72	222.4

In general you can see that we raise the water elevation approximately 0.8' to 1.0' for the storms. There is a significant reduction in peak flows. The culvert will flow full in a 10-year storm and surcharge in the 100-year storm.

The peak elevations are below the existing grades around the homes on Virginia Street.

Hopefully this addresses your final concerns.

Sincerely,

PINKHAM & GREER

Thomas S. Greer, P.E.

TSG/lk

POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN (%)	LAG (MIN)
10	66.0	74.0	69.2	3.57	134.1	91.51			32	37.3

POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN (%)	LAG (MIN)
10	66.0	74.0	70.6	9.75	261.2	153.7			41	51.1

POND 10

POND ON SITE

Qin = 261.2 CFS @ 12.57 HRS, VOLUME= 52.90 AF  
 Qout= 153.7 CFS @ 13.43 HRS, VOLUME= 52.72 AF, ATTEN= 41%, LAG= 51.1 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 9.75 AF
68.0	.30	.40	.40	PEAK ELEVATION= 70.6 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 30.8 MIN (52.72 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	6' x 4' CULVERT n=.013 L=65' S=.005'/1' Ke=.5 Cc=.9 Cd=.6
2	P	73.0'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 329.2 CFS @ 12.53 HRS, VOLUME= 66.88 AF

Qout= 178.4 CFS @ 13.54 HRS, VOLUME= 66.68 AF, ATTEN= 46%, LAG= 60.5 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 13.23 AF
68.0	.30	.40	.40	PEAK ELEVATION= 71.1 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 37.3 MIN (66.02 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	6' x 4' CULVERT n=.013 L=65' S=.005'/1 Ke=.5 Cc=.9 Cd=.6
2	P	73.0'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 425.4 CFS @ 12.49 HRS, VOLUME= 88.36 AF

Qout= 222.4 CFS @ 13.51 HRS, VOLUME= 88.12 AF, ATTEN= 48%, LAG= 61.3 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 19.93 AF
68.0	.30	.40	.40	PEAK ELEVATION= 72.0 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 45.2 MIN (88.12 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	6' x 4' CULVERT n=.013 L=65' S=.005'/1 Ke=.5 Cc=.9 Cd=.6
2	P	73.0'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0



TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 119.9 CFS @ 12.55 HRS, VOLUME= 23.34 AF

Qout= 98.62 CFS @ 12.96 HRS, VOLUME= 23.25 AF, ATTEN= 18%, LAG= 24.6 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 1.60 AF
68.0	.30	.40	.40	PEAK ELEVATION= 68.4 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 7.6 MIN (23.25 AF)

## # ROUTE INVERT OUTLET DEVICES

1 P 66.0' 10' BROAD-CRESTED RECTANGULAR WEIR X 1.81  
 Q=C L H<sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 245.7 CFS @ 12.59 HRS, VOLUME= 50.70 AF

Qout= 199.6 CFS @ 13.04 HRS, VOLUME= 50.56 AF, ATTEN= 19%, LAG= 26.8 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 5.64 AF
68.0	.30	.40	.40	PEAK ELEVATION= 69.9 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 13.8 MIN (50.06 AF)

## # ROUTE INVERT OUTLET DEVICES

1 P 66.0' 10' BROAD-CRESTED RECTANGULAR WEIR X 1.81  
 Q=C L H<sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 427.3 CFS @ 12.56 HRS, VOLUME= 85.89 AF  
 Qout= 287.7 CFS @ 13.15 HRS, VOLUME= 86.71 AF, ATTEN= 33%, LAG= 35.5 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 12.71 AF
68.0	.30	.40	.40	PEAK ELEVATION= 71.0 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 19.8 MIN (85.71 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

9 Aug 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND 10

## POND ON SITE

Qin = 314.8 CFS @ 12.56 HRS, VOLUME= 64.55 AF  
 Qout= 232.5 CFS @ 13.07 HRS, VOLUME= 64.39 AF, ATTEN= 26%, LAG= 30.5 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
66.0	.10	0.00	0.00	PEAK STORAGE = 8.14 AF
68.0	.30	.40	.40	PEAK ELEVATION= 70.3 FT
70.0	5.22	5.52	5.92	FLOOD ELEVATION= 74.0 FT
72.0	8.68	13.90	19.82	START ELEVATION= 66.0 FT
74.0	11.00	19.68	39.50	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 16.1 MIN (63.75 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	66.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

July 23, 1999  
File: 99102

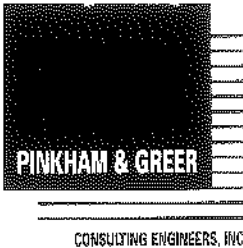
Ms. Kandi Talbot, Planner  
CITY OF PORTLAND  
389 Congress Street  
Portland, ME 04101

RE: RESPONSE TO 7/20/99 MEMO, J. WENDEL  
THE PINES BY A & G ASSOCIATES

Dear Kandi:

Below are responses to the items that Jim Wendel noted in his 7/20 memo.

1. The area above Lots 10-12 and 16-18 generally drains from Falmouth through these lots. On the north end between Lots 10 and 12 there is a concentrated flow that will be accommodated by shaping and grading the turn-a-round. The remaining will be drained along the edges of the lots to the cross street as in common with other City projects. These will be defined as part of the minor site plan review of each home as is the City's standard practice, see note on the subdivision plan.
2. Survey, Inc. is preparing recordable subdivision plans for each project. These are transmitted to you under a separate cover. The remaining lots that are owned by A & G do not include the paper streets. We do not need to go through the vacating process at this time.
3. The land along the Falmouth line is shown as future development area. We have no specific plans at this time as to a development configuration.
4. The topography has been added to the subdivision plans. As with Item 1, each lot will have a minor site plan review for grading and drainage.
5. As with Item 2 above, the City owns the rights-of-way, so reducing them in size would require vacating the streets. We do not need to go through that process at this time. We have not selected a street name for the cross street at this time but will submit it to the City for approval shortly.



6. The wetlands have been delineated on the Master Plan. There may be some small upland islands around the pond but at this time are considered too small to delineate separately. A report was completed and submitted with the permit application for the project. We recognize the need to have any permits in place for wetland impacts and will continue to file permits with the DEP as necessary.
7. The curve numbers were based on a board overview of the soils and the existing land use. The County Soils were listed for each catchment area with the hydrologic soils group, see hand written sheet submitted with the drainage calculations. The majority of this section of Portland is developed with  $\frac{1}{4}$  acre lots so the curve numbers 61 for A soils to 87 for D soils was referenced. Much of the area has C/D soils so CN 85 was selected. For Catchment 40, in Falmouth, the area is less developed so a lower CN was selected.

In general, I have tried to accurately select CN that make sense and with  $T_c$  paths that generate flows that appear correct. As with all drainage analysis the change in curve numbers is more important than the number itself. The project areas, Catchments 26 and 36 change from 78 in the existing conditions to 85 in the proposed condition. This, in my opinion, was a conservative approach to account for the current development and include future development as well. It is unlikely the entire A & G holdings will be  $\frac{1}{4}$  acre house lots, much of the area will remain undeveloped.

8. The length of 10 and 103 were kept short by design. During heavy flows, ponding occurs back towards these reaches effectively reducing their length. I believe this approach reduces the travel time in the analysis and better predicts actual conditions. We have revised the catchment areas and shown 101 on the new drawing. It is 300' from the culvert to the closed contour on the drawing. This area would be the beginning of Pond 3.
9. Reach 107 and 105 are placed one after the other to account for the change in slope. 107 uses a 5% gradient from Ledgewood to the stream, Reach 105. Based on my field observation, Reach 105 is very flat so a 0.5% slope was used. There is a short section where 104 and 105 are combined and could be added together. This approach does not change the flow reaching the pond.



CONSULTING ENGINEERS, INC.  
10. 11. 12.

CITY OF PORTLAND

July 22, 1999

Page 3

The aerial topography Jim provided was helpful in revising my calculations. Attached is a revised plan for catchments 20 to 24 for your review. I have revised the paths as well.

13. I realized Catchment 5 was under development as Jameson Place while doing the analysis. I selected a curve number of 83, which would represent the area as developed. My goal in preparing this analysis was to reflect the developed conditions as best as practicable. Please note the new development does have a detention basin to control flows that affect this project.

14. The boundary plan is being provided to you under a separate cover.

Hopefully this addressed your concerns.

Sincerely,

PINKHAM & GREER

A handwritten signature in black ink, appearing to read "Thomas S. Greer", is written over the typed name. The signature is fluid and cursive in style.

Thomas S. Greer, P.E.

TSG/lk

Enclosure

Copy: Amy Mulkerin, Greg McCormack, A&G Associates

# **THE PINES**

## **WETLANDS SUMMARY REPORT**

**July 1999**

Prepared by:  
Pinkham & Greer Consulting Engineers, Inc.  
170 U.S. Route One  
Falmouth, ME 04105  
(207) 781-5242



CONSULTING ENGINEERS, INC.



## INTRODUCTION

Wetlands at The Pines subdivision in the vicinity of Penn Ave., Kansas Ave., and Wyoming Ave, were flagged and located utilizing a TRIMBLE PRO XR GPS mapping unit. The locations were transferred to the project plans by Pinkham & Greer and are denoted on the plans. Wetlands at the site are described below and were delineated in June and November of 1998 in order to identify areas regulated by the Maine Department of Environmental Protection (DEP) and the US Army Corps of Engineers (ACOE). This report has been prepared as part of a submission for approval by the City of Portland.

## WETLAND CHARACTERISTICS

The three parameters established by the 1987 *Corps of Engineers Wetland Delineation Manual for Identifying Jurisdictional Wetlands* are vegetation, soils and hydrology. The manual requires that evidence of wetlands be exhibited by all three for an area to be designated as wetland. Information regarding each criteria as they relate to the site are presented below.

The Pines subdivision is located in the "North Deering" section of Portland, Adjacent to Penn Ave, Kansas Ave, and Wyoming and abuts the Falmouth Town Line. The property is bisected by an unnamed drainage area which contains an area of open marsh. The major portion of the wetlands on-site are associated with this drainage. The wetland boundary in some cases is very abrupt with a conspicuous topographic slope break. However, in some instances the boundary is defuse with very little change in elevation. Wetlands on site would be classified as per the National Wetlands Inventory Classification System as: Palustrine, broad-leaved, deciduous forested (PF01); Palustrine, broad-leaved, deciduous scrub shrub (PSSI); and Palustrine emergent persistent (PEE). The PF01 wetland occurs along most of the defuse boundary and is interspersed with areas of the PSSI wetland type in areas along the drainage. The PE wetland type is associated with an area of open water on the east side of the drainage. Characteristic vegetation of the PFO1 type consists of Red Maple (*Acer rubrum*), Grey Birch (*Betula populifolia*) and Aspen (*Populus, sp.*) in the overstory stratum; Speckled Alder (*Alnus rugosa*), Meadowsweet (*Spirea latifolia*), Honeysuckle (*Lonicera, sp*), Northern Arrowwood (*Viburnum recognitum*) in the shrub stratum; and sensitive fern (*Onoclea sensibilis*); Skunk Cabbage (*Symplocarpus foetidus*); and assorted sedges (*Carex spp.*). These species are listed on the National List of Plant Species that occur in wetlands as obligate, facultative wetland, or facultative indicators of wetlands and are considered hydrophytic vegetation.

Dominant upland vegetation in the wooded area consist of White Pine (*Pinus strobus*); hemlock (*Tsuga canadensis*); Northern Red Oak (*Quercus rubra*) and Aspen (*Populus, spp*) in the tree and sapling stratum; beaked hazelnut (*Corylus cornuta*); in the shrub stratum and bracken fern (*Pteridium aquilinum*) and bunchberry (*Cornus canadensis*) in the herbaceous stratum. These species



by the Corp under the Programmatic General Permit for the State of Maine. Review is subject to three categories: Category I – less than 15,000 square feet; Category II – 15,000 square feet to three acres; and Category III – more than three acres.

**The Pines**  
**A Subdivision in North Deering**  
**Portland, Maine**

**Drainage Analysis**

**July 1999**

**Prepared by:**

**Pinkham & Greer Consulting Engineers, Inc.**  
**170 U.S. Route One**  
**Falmouth, Maine 04105**

**(207) 781-5242**



**CONSULTING ENGINEERS, INC.**

# Drainage Analysis

## The Pines A Subdivision in North Deering Portland, Maine July 22, 1999

### Project Summary:

This project by A & G Associates is the combination of existing subdivision lots to create conforming lots in 3 areas of North Deering. The areas are represented by 6 lots accessed by Wyoming Ave., 4 lots accessed by Kansas Ave., and 19 lots accessed by Penn Avenue. In the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary. Each of these areas will include the construction of new roads. See Master Plans of the Pines for a layout of properties owned by A&G Associates.

### Location:

The project site is located east of Allen Avenue Extension, north of Ray Street and Virginia Street and south of the Falmouth/Portland boundary. The drainage basin above the site includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line. The area south of the site from Ray Street to Virginia Street and a small section south of Ray Street drains to the site through a series of existing stormdrains and swales. See sheets D-1 and D-2 for boundaries.

### Soils:

The area around the site is currently developed with residential housing. See D-1 and D-2 for existing development. The soils in the project drainage basin consist of a mix of hydrologic groups. Below is a partial listing of soils and groups that was used to determine curve numbers.

Table 1  
Soils

Symbol	Soil	Name	Hydrologic Group
Au		Au Gres	C
Bo		Biddeford	D
Bu		Buxton	C
De		Deerfield	B
Hr		Hollis	C/D
Hs		Hollis	C/D
Wm		Windsor	A
Sn		Scantic	D

Soils on site in the area of Penn Avenue are Hollis and Deerfield; for Kansas are Windsor and Hollis; and for Wyoming are Hollis, and Scantic with Biddeford at the bottom of the swale. Based on the County Soils Mapping and site walks, the area of construction for these projects has suitable soils for residential development.

The center of the site between Penn Ave. and Kansas Ave. is mapped as Scantic. It is a wetland area with some open water visible on the aerial photograph. This area was mapped as a wetland and is not suitable for residential development.

The remaining area to be developed is off the end of Kansas, although mapped as Scantic on the County Mapping the area is an upland and consistent with the Hollis series mapping. Future development will require an additional stream crossing to access this area. A similar box culvert to that used on Penn Avenue will be used for this crossing.

Wetland alteration permits for the Penn Avenue area and the Wyoming crossing have been obtained from the Maine Department of Environmental Protection. An additional permit is required when Kansas is extended.

#### **Topography:**

The site is located approximately one mile from the Presumpscot River and its outlet under Route 295 to Casco Bay. The drainage basin's top end at Summit Street is approximately elevation 160 according to the USGS map, on site the elevation is approximately elevation 90. Average slopes in the area are 2% with some areas up to 8%. The stream channels are relatively flat between 0.5% and 1.0%.

#### **Land Use:**

The majority of the drainage basin is developed with single-family homes on  $\frac{1}{4}$  to  $\frac{1}{2}$  acre lots. There are some areas of open fields and woods between the homes. Between Ray Street and Virginia Street there is about 8 acres of park that has mature pine trees.

On site the majority of the area between Penn Avenue and Kansas Avenue is open wetland and will remain in the existing condition. There are utility easements for sewer and water that run through the site. These provide some pedestrian access. They run along the existing paper street right of ways. See sheet D-1 and D-2 for photographic information on land use.

## **Analysis:**

The watershed, approximately 320 acres was analyzed using the Soil Conservation Service TR-20 method to predict peak flows. This method uses hydrologic soil group, vegetative cover, ground slope and land use to establish drainage conditions. The computer model, developed by Applied Microcomputer Systems of Chorcura, NH was, used to generate the technical data sheets attached.

Peak flows for the 24-hour, 2-year, 10-year, 25-year and 100-year storm events were determined using 24-hour rainfall amounts of 3.0, 4.7, 5.5 and 6.7 inches. A type III Coastal Storm was used as the project is located within 50 miles of the coast.

The drainage basin was divided into subcatchments using existing topographic features and drainage systems as a guide. Some field confirmation of pipe sizes was done for major culverts and drainage systems. Pond sizing and stage storage volumes were estimated based on field observations. Roadway culverts were modeled as ponds with a culvert outlet. This more accurately predicts existing flow conditions for larger storms.

Stream channels were estimated based on field observations. Side slopes vary through the length. In general the existing channels appear stable with a mineral base of clay or silt consistent with the soil types.

The curve numbers for each subcatchment was determined using soil type and land use. In general the curve numbers for the developed areas range from 61 for A soils to 87 for D soils. In the undeveloped condition the curve numbers were select 4 to 8 points less.

The analysis focused on peak flows below the site. The goal is to have peak flows below the site equal to or less than the existing peak flows. This ensures that the existing stream channels are not adversely affected no additional ponding or flooding will occur. Based on the model the peak flows will be reduced as noted in the following table.

Table 2  
Peak Flows Below Penn Avenue  
Cubic Feet per Second

Storm Event	2-year	10-year	25-year	100-year
Existing Flows	49.09	123.7	160.4	224.8
Proposed Flows	43.91	106.3	133.5	178.3

The flows are reduced as a result of the 30" culvert at Wyoming and the 4x6 box culvert at Penn Avenue.

There are two areas above the site that the model indicates exceed the existing stormdrain capacity in 10 to 25-year storms. These include the 30" culvert and stormdrain system crossing Allen Avenue north of Summit Street and the 30" culvert crossing Virginia Street east of Kansas. These systems date to the period of design when a 10-year design storm was common so it is expected that these systems reach capacity at that point. In terms of maintenance the culvert crossing Virginia is ¾ full of sand and has a submerged outfall.

Conclusion:

The construction of Wyoming, Kansas and Penn Avenues and future extension of Kansas Avenue will not have a detrimental affect on down stream properties from the drainage passing through this site.

STATE OF MAINE  
THOMAS S.  
GREER  
4206  
REGISTERED  
PROFESSIONAL ENGINEER

*Thomas S. Greer*  
7/23/99

# Appendix D: BROAD CRESTED WEIR COEFFICIENTS

The Pines  
Portland  
7/6/99 TSG

Note: This table contains *metric* discharge coefficients. To obtain English coefficients multiply the values in this table by 1.81, or use a multiplier of 1.81 in the HydroCAD weir description.

Discharge Coefficients for Broad-Crested Weirs\*

Cross section	Upstream head $H$ [m]							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
1	1.64	1.86	1.98					
2	1.50	1.80	1.90					
3	1.58	1.75	1.79					
4	1.53	1.64	1.77					
5	1.54	1.62	1.69					
6	1.72	1.86	1.98					
7	1.55	1.85	2.00					
8	1.50	1.80	1.93					
9				1.96	1.96	1.97	1.99	2.07
10				1.94	1.92	1.89	1.92	1.91
11				2.12	2.10	2.08	2.06	2.04
12				1.88	1.96	2.01	2.04	2.05
13				1.96	1.96	1.96	1.96	1.96
14				1.86	1.86	1.86	1.86	1.80
15	1.81	2.00						
16	2.10	2.35						
17	1.57	1.73	1.80	1.82	1.83	1.83		
18	1.44	1.46	1.55	1.56	1.69	1.76	1.84	
19	1.42	1.47	1.45	1.46	1.47	1.46	1.48	1.50
20	1.48	1.45	1.44	1.44				
21	1.56	1.60	1.69	1.70	1.74	1.84	1.92	
22	1.56	1.56	1.55	1.55	1.55	1.55	1.54	
23	2.13	2.13	2.13					
24	1.90	1.84	1.84					
25	1.96	1.98	1.97					

\* All dimensions are in meters. Tabulated values represent metric weir coefficients.

Table 9-1 Cont'd

Cross section	Upstream head $H$ [m]							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
26	1.66	1.73	1.73					
27	2.28	2.25	2.06					
28	2.06	2.12	2.12					
29	1.93	1.93	1.92					
30	2.10	2.13	2.13					
31	2.03	2.03	2.01					
32	2.03	2.03	2.01					
33	1.65	1.54	2.10					
34	1.72	1.76	1.76	1.76	1.76	1.76	1.76	1.76
35				1.87	1.84	1.81	1.82	1.82
36				1.91	1.90	1.87	1.84	1.83
37							1.89	1.87
38				1.81	1.81	1.82	1.86	1.90
39				1.82	1.83	1.85	1.87	1.88
40				1.76	1.86	1.90	1.93	1.96
41				1.72	1.92	1.98	2.05	2.04
42				1.72	1.90	2.00	2.06	2.10
43				1.78	1.84	1.85	1.93	1.97
44				1.75	1.81	1.85	1.88	1.90
45				1.80	1.82	1.95	1.94	1.85
46				1.94	1.94	1.95	1.92	1.85
47				1.72	1.72	1.70	1.72	1.76
48				1.70	1.71	1.67		
49				2.09				

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Appendix C: MANNING'S NUMBER TABLES (continued)

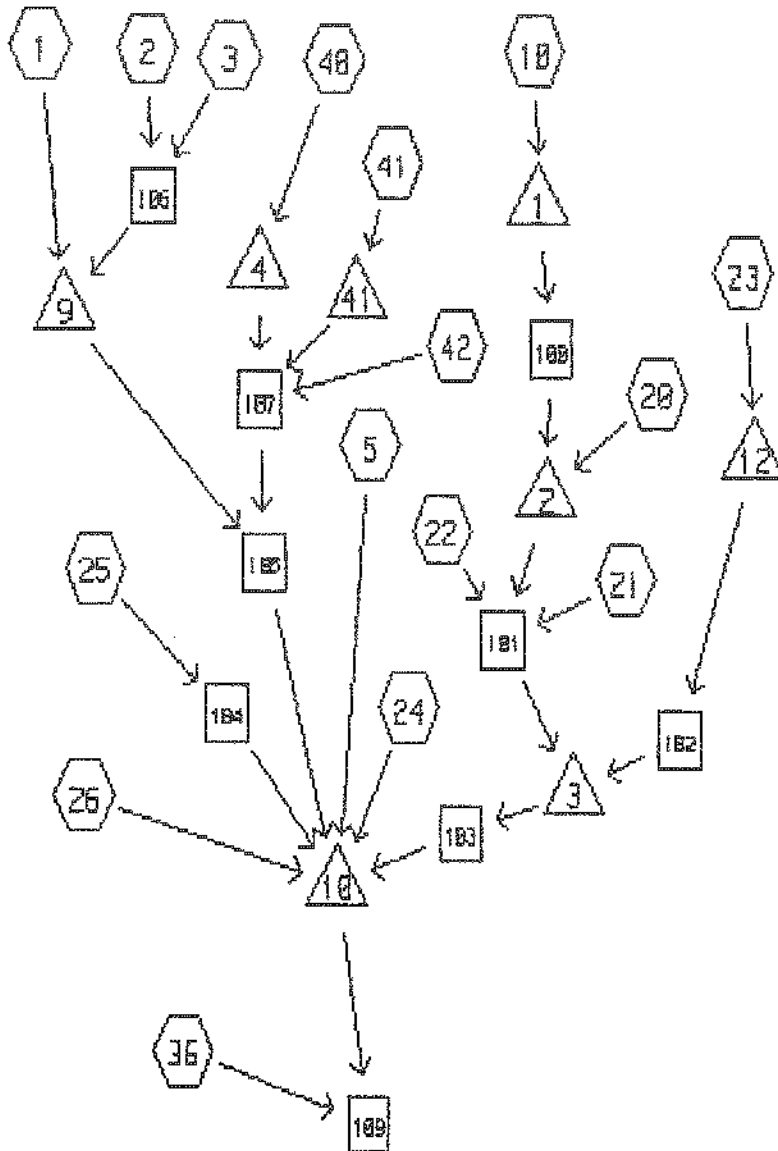
THE PINES  
Roadway  
Dec 7/6/99  
Revised

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)		VALUES OF THE ROUGHNESS COEFFICIENT n (continued)	
Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rills or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and stumps	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.040
b. Cultivated areas			
1. No crop	0.020	0.025	0.030
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.050	0.060
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage > 100 ft). The n value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.050
b. Irregular and rough section	0.035	.....	0.100

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WATERSHED ROUTING =====



SUBCATCHMENT



REACH



POND



LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

THE PINES  
 PORTLAND  
 7/6/99 TSG

B. Stormwater calculation model.

1. One day precipitation values. Values to be used in preparation of the TR-20 or TR-55 study. (Revised April 16, 1992)

S&WCD Number, Field Office and S&WCD Location	Rainfall Frequency 24-hour Duration					
	2 yr	5 yr	10 yr	25 yr	50 yr	100
1. Fort Kent - St. John Valley	2.0	3.0	3.5	4.0	4.4	4.8
2. Presque Isle - Central Aroostook	2.4	3.2	3.6	4.2	4.6	5.0
3. Houlton - Southern Aroostook	2.5	3.3	3.8	4.4	4.8	5.3
4. Sanford - York County	2.5	4.0	4.6	5.4	6.0	6.6
5. Dover-Foxcroft - Piscataquis County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.6	3.4	4.0	4.6	5.0	5.5
6. Belfast - Waldo County	2.5	3.7	4.3	4.9	5.5	6.0
7. Bangor - Penobscot County						
- North of CPR	2.5	3.3	3.8	4.4	4.9	5.4
- South of CPR	2.7	3.5	4.1	4.8	5.3	5.8
8. Skowhegan - Somerset County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.7	3.5	4.1	4.7	5.2	5.7
9. Portland - Cumberland County						
- Northwest of Route 11	3.3	4.3	5.0	5.8	6.4	7.9
- Southeast of Route 11	3.0	4.0	4.7	5.5	6.0	6.7
10. South Paris - Oxford County						
- West of Route 26	3.5	4.5	5.2	6.0	6.5	7.1
- East of Route 26	3.0	4.0	4.6	5.3	5.9	6.4
11. Augusta - Kennebec County	3.0	3.8	4.4	5.1	5.6	6.1
12. Rockland - Knox - Lincoln County	2.9	3.8	4.4	5.1	5.6	6.2
13. Auburn - Androscoggin Valley	3.0	3.9	4.6	5.4	5.9	6.5
14. Farmington - Franklin County	2.9	3.7	4.2	4.9	5.4	5.9
15. Machias - Washington County	2.5	3.4	4.0	4.8	5.3	5.9
16. Ellsworth - Hancock County	2.7	3.6	4.2	4.9	5.4	6.0

Appendix A: RUNOFF CURVE NUMBERS

THE PINES  
PORTLAND  
7/6/99 TSB

Runoff curve numbers for urban areas<sup>1</sup>

Cover description	Average percent impervious area <sup>2</sup>	Curve numbers for hydrologic soil group--			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3</sup> :					
Poor condition (grass cover < 50%) .....		63	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....		98	98	98	98
Paved; open ditches (including right-of-way) .....		83	89	92	93
Gravel (including right-of-way) .....		76	85	89	91
Dirt (including right-of-way) .....		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup> ...		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	61	75	83	87
1/3 acre .....	30	57	72	81	86
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup>The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

# THE PINES CN BASED ON SOILS

7/6/99

AREA	Predominant Soil Group	SIZE	CH
1 Summit St to N to Allen Ave	$\frac{1}{2} D \frac{1}{2} W$ 75 1/61	12.1	1/4
2 Summit St H.	$\frac{1}{6} S \frac{1}{6} D \frac{2}{6} A$ 75 83	20.5	
3 NE.	$\frac{1}{6} S \frac{2}{6} S \frac{3}{6} A$ 87 75	22.0	
4. <del>W of Greenwood</del>	<del>H S D (81)</del>		
5. South of Greenwood	$\frac{1}{2} S \frac{1}{4} D \frac{1}{4} A$ 87 83	36.7	
10 School to Avenue	$\frac{1}{3} D \frac{1}{3} H \frac{1}{3} A/S$ 83 85	48	
20 Corner Virginia, Alley, Ray	$\frac{1}{2} A \frac{1}{2} D$ 83 75	4.6	
21 1/2 East of Wyoming	$\frac{1}{2} S \frac{1}{2} B$ 87 83	1.4	
22 Pine Grove	$\frac{2}{3} H \frac{1}{3} H$ 85	15.5	
23 Ray & Alley	$\frac{1}{2} H \frac{1}{2} S$ (85)	11.0	
24 S. Pine Grove	$\frac{1}{2} B \frac{1}{2} H$ (85)	8.6	
25 Ragwee St.	$\frac{1}{2} D \frac{1}{2} H$ 85	10.3	
26 THE SITE	$\frac{2}{3} S \frac{1}{6} S \frac{1}{6} H$ (85)	43.5	
36 Below Penn	$\frac{2}{3} H \frac{1}{3} S$ (85)	3.4	

TYPE III 24-HOUR RAINFALL= 3.00 IN

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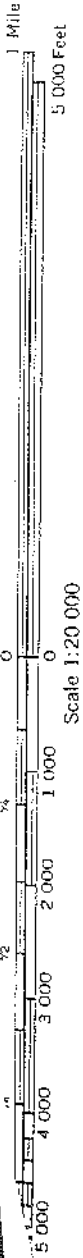
22 Jul 99

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SUBCATCHMENT 2	= SUMMIT NORTH	-> REACH 106
SUBCATCHMENT 3	= NORTH WEST	-> REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	-> POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	-> POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	-> POND 2
SUBCATCHMENT 21	= EAST OF WYOMING	-> REACH 101
SUBCATCHMENT 22	= PINE GROVE	-> REACH 101
SUBCATCHMENT 23	= RAY ALLEN	-> POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	-> POND 10
SUBCATCHMENT 25	= RACINE ST	-> REACH 104
SUBCATCHMENT 26	= THE SITE	-> POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	-> REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	-> POND 4
SUBCATCHMENT 41	= NORTH OF LEDGWOOD	-> POND 41
SUBCATCHMENT 42	= NORTHEAST OF LEDGEWOOD	-> REACH 107
REACH 100	= STREAM	-> POND 2
REACH 101	= STREAM	-> POND 3
REACH 102	= STREAM RAY TO VIRGINIA	-> POND 3
REACH 103	= STREAM TO POND	-> POND 10
REACH 104	= STREAM TO POND	-> POND 10
REACH 105	= STREAM TO POND	-> POND 10
REACH 106	= STORM DRAIN	-> POND 9
REACH 107	=	-> REACH 105
REACH 109	= STREAM	->
POND 1	= EXISTING DETENTION ON ALLEN	-> REACH 100
POND 2	= WYOMING DETENTION	-> REACH 101
POND 3	= CULVERT AT VIRGINIA	-> REACH 103
POND 4	= CULVERT AT LEDGEWOOD	-> REACH 107

SuE2 (Joins sheet 67) SuE2

THE PINES PORTLAND BCG 7/16/99



333 000 FEET

(Joins sheet 82)

H4B

POND 9	= CULVERT AND CB AT ALLEN	-> REACH 105
POND 10	= POND ON SITE	-> REACH 109
POND 12	= DETENTION ABOVE RAY	-> REACH 102
POND 41	= CULVERT AT LEDGWOOD	-> REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	4.0	.4	27.04
101	-	3.0	5.0	.30	.30	.035	300	.0150	4.2	1.2	31.31
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.1	2.9	9.47
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.7	3.1	37.40
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	300	.0050	2.6	1.9	43.91



TYPE III 24-HOUR RAINFALL= 3.00 IN

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	4.22	12.44	.56
2	26.50	40.9	50%75 17%83 33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75 50%83	79	-	20.23	12.24	2.00
5	36.70	34.4	50%87 25%75 25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85 33%83 33%75	81	-	28.68	12.78	4.76
20	5.16	27.2	50%83 50%75	79	-	4.10	12.35	.47
21	1.44	19.1	50%87 50%83	85	-	1.82	12.22	.18
22	10.62	32.8	81%78 19%83	79	-	7.80	12.43	.96
23	11.00	32.3	100%85	85	-	11.13	12.41	1.33
24	8.97	29.3	77%85 23%75	83	-	8.58	12.37	.99
25	10.30	14.4	100%85	85	-	14.03	12.16	1.25
26	43.50	43.0	100%85	85	-	38.26	12.55	5.26
36	3.40	13.4	100%85	85	-	4.84	12.14	.41
40	31.00	63.3	100%72	72	-	10.00	12.89	1.84
41	3.10	74.0	50%77 50%66	72	-	.90	13.04	.18
42	2.00	43.6	100%72	72	-	.80	12.62	.12

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	112.6	.25	28.68	27.06			6	9.3
2	90.0	98.0	92.6	.20	28.40	27.81			2	7.4
3	88.0	96.0	92.9	.53	40.28	37.51			7	18.0
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.8	11.53	134.1	43.53			68	95.4
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
41	110.0	114.0	110.4	.01	.90	.90			0	2.3

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	12.94	12.39	1.53
2	26.50	40.9	50%75 17%83 33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75 50%83	79	-	44.41	12.23	4.28
5	36.70	34.4	50%87 25%75 25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85 33%83 33%75	81	-	60.41	12.76	9.91
20	5.16	27.2	50%83 50%75	79	-	9.06	12.33	1.00
21	1.44	19.1	50%87 50%83	85	-	3.53	12.22	.34
22	10.62	32.8	81%78 19%83	79	-	17.11	12.41	2.06
23	11.00	32.3	100%85	85	-	21.57	12.40	2.57
24	8.97	29.3	77%85 23%75	83	-	17.28	12.36	1.98
25	10.30	14.4	100%85	85	-	27.14	12.15	2.40
26	43.50	43.0	100%85	85	-	74.27	12.53	10.15
36	3.40	13.4	100%85	85	-	9.38	12.14	.79
40	31.00	63.3	100%72	72	-	26.66	12.84	4.59
41	3.10	74.0	50%77 50%66	72	-	2.41	12.98	.46
42	2.00	43.6	100%72	72	-	2.13	12.58	.30

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	4.6	.4	44.68
101	-	3.0	5.0	.30	.30	.035	300	.0150	4.8	1.1	53.66
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.5	2.7	14.24
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.1	2.7	67.20
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.3	1.5	106.3

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	115.9	1.13	60.41	44.69			26	23.4
2	90.0	98.0	94.9	.53	46.74	45.25			3	17.0
3	88.0	96.0	93.8	.65	67.50	71.15			0	0.0
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	103.5	22.78	261.2	105.6			60	105.1
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
41	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	5.16	27.2	50%83 50%75	79	-	11.52	12.33	1.27
21	1.44	19.1	50%87 50%83	85	-	4.35	12.22	.41
22	10.62	32.8	81%78 19%83	79	-	21.76	12.41	2.62
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.97	29.3	77%85 23%75	83	-	21.51	12.35	2.46
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%85	85	-	91.58	12.53	12.51
36	3.40	13.4	100%85	85	-	11.56	12.13	.97
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	5.1	.3	67.47
101	-	3.0	5.0	.30	.30	.035	300	.0150	5.0	1.0	62.63
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.6	2.6	16.04
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.2	2.6	77.28
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.6	1.4	133.5

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.5	1.45	76.17	67.42			11	15.1
2	90.0	98.0	97.0	1.02	70.57	56.96			19	17.3
3	88.0	96.0	93.8	.67	77.68	80.71			0	1.2
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	104.1	27.02	329.2	132.7			60	101.5
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
41	110.0	114.0	110.8	.01	3.21	3.21			0	1.4



TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 6.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	25.38	12.37	2.93
2	26.50	40.9	50%75 17%83 33%61	72	-	53.86	12.52	7.22
3	22.00	19.4	50%75 50%83	79	-	74.95	12.22	7.17
5	36.70	34.4	50%87 25%75 25%83	83	-	106.6	12.42	13.03
10	48.00	59.4	33%85 33%83 33%75	81	-	100.1	12.74	16.36
20	5.16	27.2	50%83 50%75	79	-	15.29	12.33	1.68
21	1.44	19.1	50%87 50%83	85	-	5.59	12.21	.53
22	10.62	32.8	81%78 19%83	79	-	28.88	12.40	3.46
23	11.00	32.3	100%85	85	-	34.13	12.39	4.06
24	8.97	29.3	77%85 23%75	83	-	28.05	12.35	3.18
25	10.30	14.4	100%85	85	-	43.63	12.15	3.78
26	43.50	43.0	100%85	85	-	117.6	12.53	16.08
36	3.40	13.4	100%85	85	-	14.84	12.13	1.25
40	31.00	63.3	100%72	72	-	49.38	12.81	8.40
41	3.10	74.0	50%77 50%66	72	-	4.47	12.95	.84
42	2.00	43.6	100%72	72	-	3.93	12.56	.54

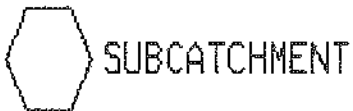
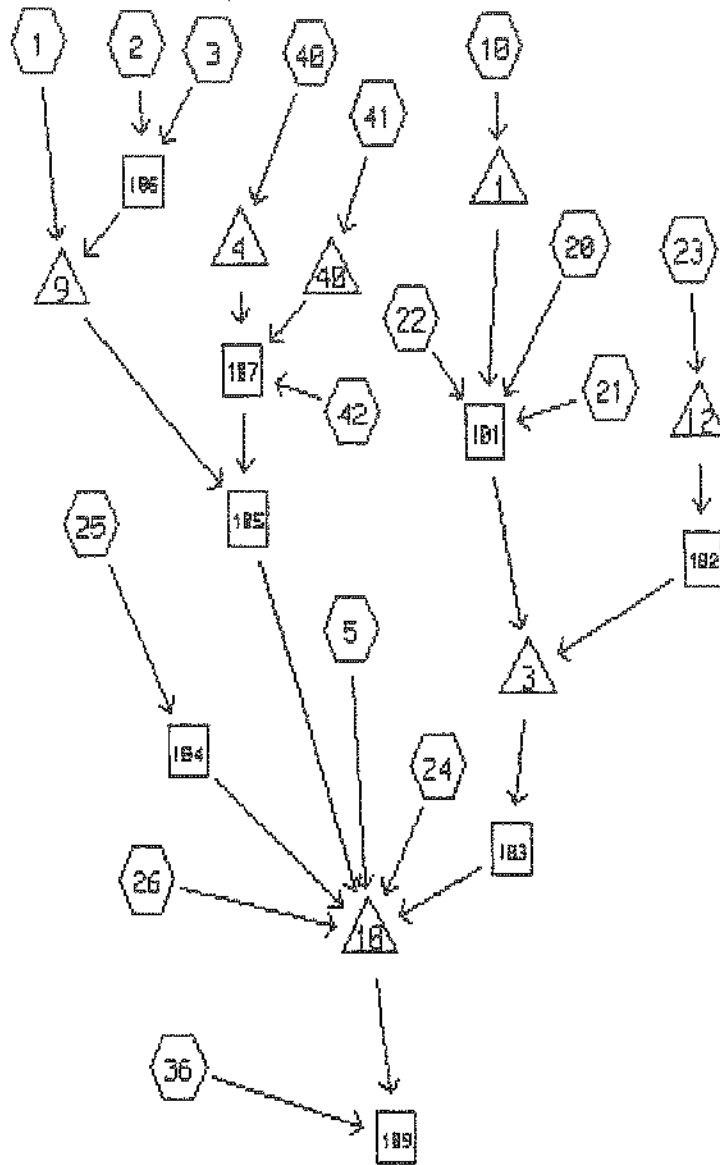
REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	5.6	.3	95.56
101	-	3.0	5.0	.30	.30	.035	300	.0150	5.8	.9	112.3
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.7	2.5	18.19
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.6	2.3	126.6
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.7	4.3	40.21
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.3	2.5	87.32
106	30.0	-	-	-	-	.013	600	.0050	6.6	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.9	3.0	51.65
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.8	1.3	178.3

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.9	1.67	100.1	96.25			4	8.3
2	90.0	98.0	97.8	1.24	100.8	99.15			2	6.0
3	88.0	96.0	94.1	.72	130.3	130.7			0	.8
4	110.0	114.0	114.0	1.75	49.38	45.82			7	13.0
9	110.0	114.0	113.8	.84	54.38	56.24			0	3.9
10	100.0	104.0	105.1	33.83	425.4	177.2			58	82.8
12	108.0	114.0	113.3	.87	34.13	18.23			47	24.2
41	110.0	114.0	111.0	.01	4.47	4.46			0	1.4

WATERSHED ROUTING =====



SUBCATCHMENT



REACH



POND



LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

TYPE III 24-HOUR RAINFALL= 3.00 IN

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SUBCATCHMENT 2	= SUMMIT NORTH	-> REACH 106
SUBCATCHMENT 3	= NORTH WEST	-> REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	-> POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	-> POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	-> REACH 101
SUBCATCHMENT 21	= EAST OF WYOMING	-> REACH 101
SUBCATCHMENT 22	= PINE GROVE	-> REACH 101
SUBCATCHMENT 23	= RAY ALLEN	-> POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	-> POND 10
SUBCATCHMENT 25	= RACINE ST	-> REACH 104
SUBCATCHMENT 26	= THE SITE	-> POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	-> REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	-> POND 4
SUBCATCHMENT 41	= NORTH OF LEDGEWOOD	-> POND 40
SUBCATCHMENT 42	= NORTEAST OF LEDGEWOOD	-> REACH 107
REACH 101	= STREAM	-> POND 3
REACH 102	= STREAM RAY TO VIRGINIA	-> POND 3
REACH 103	= STREAM TO POND	-> POND 10
REACH 104	= STREAM TO POND	-> POND 10
REACH 105	= STREAM TO POND	-> POND 10
REACH 106	= STORM DRAIN	-> POND 9
REACH 107	=	-> REACH 105
REACH 109	= STREAM	->
POND 1	= CULVERT AND CB AT ALLEN	-> REACH 101
POND 3	= CULVERT AT VIRGINIA	-> REACH 103
POND 4	= CULVERT AT LEDGEWOOD	-> REACH 107
POND 9	= EXISTING CULVERT AND CB ON ALLEN	-> REACH 105
POND 10	= POND ON SITE	-> REACH 109

Data for THE PINES PORTLAND 98113 TSG 5/7/99 EXISTING  
TYPE III 24-HOUR RAINFALL= 3.00 IN

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POND 12	= DETENTION ABOVE RAY	-> REACH 102
POND 40	= CULVERT AT LEDGEWOOD	-> REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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22 Jul 99

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	4.22	12.44	.56
2	26.50	40.9	50%75 17%83 33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75 50%83	79	-	20.23	12.24	2.00
5	36.70	34.4	50%87 25%75 25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85 33%83 33%75	81	-	28.68	12.78	4.76
20	5.16	27.2	50%78 50%71	75	-	3.20	12.37	.37
21	1.44	19.1	50%80 50%74	77	-	1.18	12.24	.12
22	10.62	32.8	81%78 19%83	79	-	7.80	12.43	.96
23	11.00	32.3	100%85	85	-	11.13	12.41	1.33
24	8.97	21.0	77%85 23%75	83	-	9.78	12.25	.99
25	10.30	14.4	100%85	85	-	14.03	12.16	1.25
26	43.50	43.0	100%78	78	-	26.33	12.58	3.70
36	3.40	20.0	100%78	78	-	2.91	12.25	.29
40	31.00	63.3	100%72	72	-	10.00	12.89	1.84
41	3.10	74.0	50%77 50%66	72	-	.90	13.04	.18
42	2.00	43.6	100%72	72	-	.80	12.62	.12

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	4.1	1.6	30.61
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.1	2.9	9.47
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.7	3.1	36.56
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	700	.0050	2.7	4.3	49.09



TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	112.5	.45	28.68	25.69			10	13.3
3	88.0	96.0	92.8	.51	39.50	36.69			7	17.1
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.5	9.49	119.9	48.80			59	85.9
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
40	110.0	114.0	110.4	.01	.90	.90			0	2.3

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	12.94	12.39	1.53
2	26.50	40.9	50%75 17%83 33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75 50%83	79	-	44.41	12.23	4.28
5	36.70	34.4	50%87 25%75 25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85 33%83 33%75	81	-	60.41	12.76	9.91
20	5.16	27.2	50%78 50%71	75	-	7.80	12.34	.87
21	1.44	19.1	50%80 50%74	77	-	2.72	12.23	.26
22	10.62	32.8	81%78 19%83	79	-	17.11	12.41	2.06
23	11.00	32.3	100%85	85	-	21.57	12.40	2.57
24	8.97	21.0	77%85 23%75	83	-	19.98	12.24	1.98
25	10.30	14.4	100%85	85	-	27.14	12.15	2.40
26	43.50	43.0	100%78	78	-	59.10	12.55	8.15
36	3.40	20.0	100%78	78	-	6.54	12.23	.64
40	31.00	63.3	100%72	72	-	26.66	12.84	4.59
41	3.10	74.0	50%77 50%66	72	-	2.41	12.98	.46
42	2.00	43.6	100%72	72	-	2.13	12.58	.30

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	5.3	1.3	75.52
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.5	2.7	14.24
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.3	2.5	87.48
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20	.20	.035	700	.0050	3.5	3.3	123.6

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.8	.86	60.41	60.51			0	3.2
3	88.0	96.0	93.9	.67	89.75	88.44			1	1.3
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	102.8	18.19	245.7	122.9			50	69.8
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
40	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

22 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	5.16	27.2	50%78 50%71	75	-	10.17	12.34	1.13
21	1.44	19.1	50%80 50%74	77	-	3.50	12.22	.34
22	10.62	32.8	81%78 19%83	79	-	21.76	12.41	2.62
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.97	21.0	77%85 23%75	83	-	24.88	12.24	2.45
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%78	78	-	75.78	12.54	10.40
36	3.40	20.0	100%78	78	-	8.37	12.23	.81
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30 .30	.035	400	.0150	5.6	1.2	98.40
102	-	3.0	3.0	.20 .20	.035	550	.0200	3.6	2.6	16.04
103	-	2.0	3.0	.20 .20	.035	500	.0050	3.5	2.4	112.0
104	-	5.0	4.0	.20 .20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20 .20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	- -	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02 .02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20 .20	.035	700	.0050	3.7	3.1	160.4

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

22 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.9	.89	76.17	76.07			0	2.3
3	88.0	96.0	94.0	.70	114.3	112.6			2	2.1
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	103.4	21.90	314.8	159.6			49	60.8
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
40	110.0	114.0	110.8	.01	3.21	3.21			0	1.4

AMERICAN SCIENTIFIC LIGHTING  
 POST HEX LANTERNLITE  
 W/ POST COLLAR PHOTOCCELL  
 COMPACT FLUORESCENT  
 PCL/Q22 PHL PCP

LAMP  
 QUAD 22/27 K

1" C - (2) #12 &  
 (1) #12 GROUND

TO HOUSE  
 PANEL

(2) LIGHT  
 POLES / BASES

3" x 3" x 8'-0"  
 EXTRUDED ALUMINUM  
 POST W/ PIER  
 MOUNT BASE

8'-0"

1" CONDUIT  
 W/ WIRES AS  
 INDICATED

BASE COVER

**SITE PLAN**

PROPOSED MODIFICATIONS  
 TO SITE LIGHTING PLAN

LIGHT POLE BASE  
 ANCHOR BOLTS

(2) #4 REBAR

12" x 48" CONCRETE  
 FILLED SONG TUBE

**LIGHT POLE / BASE DETAIL**



□ 434 Cumberland Avenue  
 Portland, ME 04101  
 Phone: (207)774-4441  
 Fax: (207)774-4016

□ PO Box 6555  
 Laconia, NH 03247  
 Phone: (603)524-5000  
 Fax: (603)527-0700

Owner:  
 CASA  
 C.O.  
 COMMUNITY HOUSING  
 OF MAINE

85 High Street  
 Portland, ME

Project:  
**CASA  
 PORTLAND**  
 Portland, ME.

Project No: 98425 PCA

Drawing Title:  
**SITE  
 LIGHTING**

Scale:  
 Date: 7/15/00  
 Revised:

Drawing Number:  
**SK4**





CURTIS WALTER STEWART  
ARCHITECTS

434 Cumberland Ave.  
Portland ME 04101-2325  
(207)-774-4441

TO: Planning and Urban Devel.  
389 Congress Str.  
Portland, ME 04101

LETTER OF TRANSMITTAL

DATE: 7/17/00	JOB NO.
ATTENTION: Candy Talbot	
RE: CASA Portland	

WE ARE SENDING YOU Attached Under separate cover via \_\_\_\_\_  
the following items:

- Shop drawings     Prints     Plans     Samples     Specifications  
 Copy of letter     Change order     \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
1	7/17/00		Proposed light fixture for CASA Portland

THESE ARE TRANSMITTED as checked below:

- For approval     Approved as submitted     Resubmit \_\_\_\_\_ copies for approval  
 For your use     Approved as noted     Submit \_\_\_\_\_ copies for distribution  
 As requested     Returned for corrections     Return \_\_\_\_\_ corrected prints  
 For review and comment     \_\_\_\_\_  
 FOR BIDS DUE \_\_\_\_\_     PRINTS RETURNED AFTER LOAN TO US

REMARKS:  
 \_\_\_\_\_  
 Please call me for a discussion.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

COPY TO \_\_\_\_\_ SIGNED: Ben Walter  


*If enclosures are not as noted, kindly notify us at once.*

**The Pines  
A Subdivision in North Deering  
Portland, Maine**

**Drainage Analysis**

**July 1999**

**Prepared by:**

**Pinkham & Greer Consulting Engineers, Inc.  
170 U.S. Route One  
Falmouth, Maine 04105**

**(207) 781-5242**



**CONSULTING ENGINEERS, INC.**

# Drainage Analysis

## The Pines A Subdivision in North Deering Portland, Maine 7/7/99

### Project Summary:

This project by A & G Associates is the combination of existing subdivision lots to create conforming lots in 3 areas of North Deering. The areas are represented by 6 lots accessed by Wyoming Ave., 4 lots accessed by Kansas Ave., and 19 lots accessed by Penn Avenue. In the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary. Each of these areas will include the construction of new roads. See Master Plans of the Pines for a layout of properties owned by A&G Associates.

### Location:

The project site is located east of Allen Avenue Extension, north of Ray Street and Virginia Street and south of the Falmouth/Portland boundary. The drainage basin above the site includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line. The area south of the site from Ray Street to Virginia Street and a small section south of Ray Street drains to the site through a series of existing stormdrains and swales. See sheets D-1 and D-2 for boundaries.

### Soils:

The area around the site is currently developed with residential housing. See D-1 and D-2 for existing development. The soils in the project drainage basin consist of a mix of hydrologic groups. Below is a partial listing of soils and groups that was used to determine curve numbers.

Table 1  
Soils

Symbol Soil	Name	Hydrologic Group
Au	Au Gres	C
Bo	Biddeford	D
Bu	Buxton	C
De	Deerfield	B
Hr	Hollis	C/D
Hs	Hollis	C/D
Wm	Windsor	A
Sn	Scantic	D

Soils on site in the area of Penn Avenue are Hollis and Deerfield; for Kansas are Windsor and Hollis; and for Wyoming are Hollis, and Scantic with Biddeford at the bottom of the swale. Based on the County Soils Mapping and site walks, the area of construction for these projects has suitable soils for residential development.

The center of the site between Penn Ave. and Kansas Ave. is mapped as Scantic. It is a wetland area with some open water visible on the aerial photograph. This area was mapped as a wetland and is not suitable for residential development.

The remaining area to be developed is off the end of Kansas, although mapped as Scantic on the County Mapping the area is an upland and consistent with the Hollis series mapping. Future development will require an additional stream crossing to access this area. A similar box culvert to that used on Penn Avenue will be used for this crossing.

Wetland alteration permits for the Penn Avenue area and the Wyoming crossing have been obtained from the Maine Department of Environmental Protection. An additional permit is required when Kansas is extended.

#### **Topography:**

The site is located approximately one mile from the Presumpscot River and its outlet under Route 295 to Casco Bay. The drainage basin's top end at Summit Street is approximately elevation 160 according to the USGS map, on site the elevation is approximately elevation 90. Average slopes in the area are 2% with some areas up to 8%. The stream channels are relatively flat between 0.5% and 1.0%.

#### **Land Use:**

The majority of the drainage basin is developed with single-family homes on ¼ to ½ acre lots. There are some areas of open fields and woods between the homes. Between Ray Street and Virginia Street there is about 8 acres of park that has mature pine trees.

On site the majority of the area between Penn Avenue and Kansas Avenue is open wetland and will remain in the existing condition. There are utility easements for sewer and water that run through the site. These provide some pedestrian access. They run along the existing paper street right of ways. See sheet D-1 and D-2 for photographic information on land use.

## **Analysis:**

The watershed, approximately 320 acres was analyzed using the Soil Conservation Service TR-20 method to predict peak flows. This method uses hydrologic soil group, vegetative cover, ground slope and land use to establish drainage conditions. The computer model, developed by Applied Microcomputer Systems of Chocoma, NH was used to generate the technical data sheets attached.

Peak flows for the 24-hour, 2-year, 10-year, 25-year and 100-year storm events were determined using 24-hour rainfall amounts of 3.0, 4.7, 5.5 and 6.7 inches. A type III Coastal Storm was used as the project is located within 50 miles of the coast.

The drainage basin was divided into subcatchments using existing topographic features and drainage systems as a guide. Some field confirmation of pipe sizes was done for major culverts and drainage systems. Pond sizing and stage storage volumes were estimated based on field observations. Roadway culverts were modeled as ponds with a culvert outlet. This more accurately predicts existing flow conditions for larger storms.

Stream channels were estimated based on field observations. Side slopes vary through the length. In general the existing channels appear stable with a mineral base of clay or silt consistent with the soil types.

The curve numbers for each subcatchment was determined using soil type and land use. In general the curve numbers for the developed areas range from 61 for A soils to 87 for D soils. In the undeveloped condition the curve numbers were select 4 to 8 points less.

The analysis focused on peak flows below the site. The goal is to have peak flows below the site equal to or less than the existing peak flows. This ensures that the existing stream channels are not adversely affected no additional ponding or flooding will occur. Based on the model the peak flows will be reduced as noted in the following table.

Table 2  
Peak Flows Below Penn Avenue  
Cubic Feet per Second

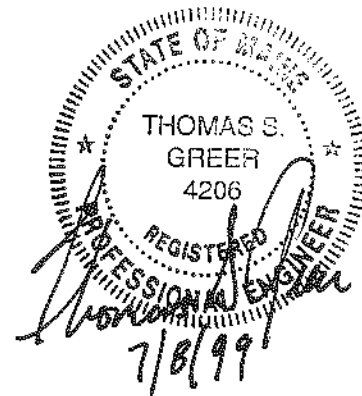
Storm Event	2-year	10-year	25-year	100-year
Existing Flows	48.55	122.4	158.4	221.6
Proposed Flows	43.40	105.2	132.2	176.0

The flows are reduced as a result of the 30" culvert at Wyoming and the 4x6 box culvert at Penn Avenue.

There are two areas above the site that the model indicates exceed the existing stormdrain capacity in 10 to 25-year storms. These include the 30" culvert and stormdrain system crossing Allen Avenue north of Summit Street and the 30" culvert crossing Virginia Street east of Kansas. These systems date to the period of design when a 10-year design storm was common so it is expected that these systems reach capacity at that point. In terms of maintenance the culvert crossing Virginia is  $\frac{3}{4}$  full of sand and has a submerged outfall.

**Conclusion:**

The construction of Wyoming, Kansas and Penn Avenues and future extension of Kansas Avenue will not have a detrimental affect on down stream properties from the drainage passing through this site.



# Appendix D: BROAD CRESTED WEIR COEFFICIENTS

The Pines  
Portland  
7/4/99 TS16

Note: This table contains *metric* discharge coefficients. To obtain English coefficients multiply the values in this table by 1.81, or use a multiplier of 1.81 in the HydroCAD weir description.

Discharge Coefficients for Broad-Crested Weirs\*

Cross section	Upstream head $h$ [m]								
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50	
1	1.61	1.66	1.98						
2	1.60	1.80	1.90						
3	1.58	1.75	1.78						
4	1.53	1.64	1.77						
5	1.54	1.62	1.69						
6	1.72	1.88	1.98						
7	1.65	1.68	2.00						
8	1.53	1.80	1.93						
9				1.96	1.96	1.97	1.99	2.02	
10				1.94	1.92	1.89	1.92	1.97	
11				2.12	2.10	2.08	2.06	2.04	2.00
12				1.88	1.96	2.07	2.04	2.05	2.05
13				1.96	1.96	1.96	1.96	1.96	
14				1.86	1.86	1.86	1.86	1.86	
15	1.81	2.00							
16	2.10	2.35							
17	1.57	1.73	1.80	1.82	1.83	1.83			
18	1.44	1.46	1.55	1.56	1.69	1.76	1.84		
19	1.43	1.47	1.45	1.46	1.47	1.46	1.48	1.59	
20	1.48	1.45	1.44	1.44					
21	1.56	1.60	1.65	1.70	1.74	1.84	1.92		
22	1.56	1.56	1.55	1.55	1.55	1.55	1.54		
23	2.13	2.13	2.13						
24	1.93	1.84	1.94						
25	1.94	1.98	1.97						

\* All dimensions are in meters. Tabulated values represent metric weir coefficients.

Table 9-1 Cont'd

Cross section	Upstream head $h$ [m]									
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50		
26	1.68	1.73	1.73							
27	2.23	2.25	2.08							
28	2.08	2.12	2.12							
29	1.92	1.93	1.92							
30	2.10	2.13	2.13							
31	2.03	2.03	2.04							
32	2.03	2.03	2.01							
33	1.65	1.94	2.10							
34	1.72	1.76	1.76	1.76	1.76	1.76	1.76	1.76		
35				1.87	1.84	1.81	1.87	1.82	1.85	
36				1.91	1.90	1.87	1.84	1.83	1.86	1.90
37							1.89	1.87	1.87	1.88
38				1.81	1.81	1.82	1.86	1.90	1.97	2.01
39	1.12	1.89	1.90	1.88	1.88	1.88	1.88	1.95	2.05	
40	1.76	1.92	1.98	2.06	2.04	2.04				
41	1.72	1.90	2.00	2.06	2.10	2.13				
42	1.78	1.84	1.99	1.93	1.97	2.00				
43	1.75	1.81	1.85	1.88	1.90	1.92	1.95			
44	1.80	1.92	1.95	1.94	1.95	1.92				
45	1.94	1.94	1.95	1.92	1.85	1.81	1.78			
46	1.72	1.72	1.70	1.72	1.76	1.79	1.85			
47	1.70	1.71	1.82							
48	2.09									

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Appendix C: MANNING'S NUMBER TABLES (continued)

THE P.H.E.S.  
 ROUTING  
 1/26/99  
 COEFFICIENT n (continued)

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages	0.030	0.040	0.050
1. Bottom: gravels, cobbles, and few boulders			
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
<b>D-2. Flood plains</b>			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.060	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
<b>D-3. Major streams (top width at flood stage &gt; 100 ft). The n value is less than that for minor streams of similar description, because banks offer less effective resistance.</b>			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

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Appendix A: RUNOFF CURVE NUMBERS

THE PINES  
 PORTLAND  
 7/6/99 TSC

Runoff curve numbers for urban areas<sup>1</sup>

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area <sup>2</sup>	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.):					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)					
Streets and roads:		98	98	98	98
Paved; curbs and storm sewers (excluding right-of-way)					
Paved; open ditches (including right-of-way)		98	98	98	98
Gravel (including right-of-way)		83	89	92	93
Dirt (including right-of-way)		76	85	89	91
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup>		68	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)		65	77	85	90
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup>					
Idle lands (CN's are determined using cover types similar to those in table 2-2c)		77	86	91	94

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ .  
<sup>2</sup>The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.  
<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.  
<sup>4</sup>Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.  
<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

THE PINES

PORTLAND

7/6/99 TSG

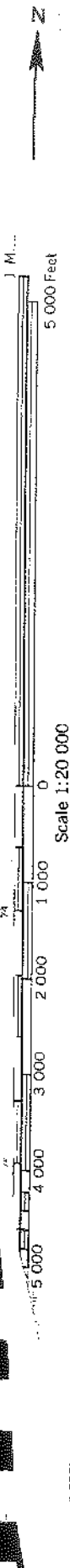
B. Stormwater calculation model.

1. One day precipitation values. Values to be used in preparation of the TR-20 or TR-55 study. (Revised April 16, 1992)

S&WCD Number, Field Office and S&WCD Location	Rainfall Frequency 24-hour Duration					
	2 yr	5 yr	10 yr	25 yr	50 yr	100 yr
1. Fort Kent - St. John Valley	2.0	3.0	3.5	4.0	4.4	4.8
2. Presque Isle - Central Aroostook	2.4	3.2	3.6	4.2	4.6	5.0
3. Houlton - Southern Aroostook	2.5	3.3	3.8	4.4	4.8	5.3
4. Sanford - York County	2.5	4.0	4.6	5.4	6.0	6.6
5. Dover-Foxcroft - Piscataquis County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.6	3.4	4.0	4.6	5.0	5.5
6. Belfast - Waldo County	2.5	3.7	4.3	4.9	5.5	6.0
7. Bangor - Penobscot County						
- North of CPR	2.5	3.3	3.8	4.4	4.9	5.4
- South of CPR	2.7	3.5	4.1	4.8	5.3	5.8
8. Skowhegan - Somerset County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.7	3.5	4.1	4.7	5.2	5.7
9. Portland - Cumberland County						
- Northwest of Route 11	3.3	4.3	5.0	5.8	6.4	7.9
- Southeast of Route 11	3.0	4.0	4.7	5.5	6.0	6.7
10. South Paris - Oxford County						
- West of Route 26	3.5	4.5	5.2	6.0	6.5	7.1
- East of Route 26	3.0	4.0	4.6	5.3	5.9	6.4
11. Augusta - Kennebec County	3.0	3.8	4.4	5.1	5.6	6.1
12. Rockland - Knox - Lincoln County	2.9	3.8	4.4	5.1	5.6	6.2
13. Auburn - Androscoggin Valley	3.0	3.9	4.6	5.4	5.9	6.5
14. Farmington - Franklin County	2.9	3.7	4.2	4.9	5.4	5.9
15. Machias - Washington County	2.5	3.4	4.0	4.8	5.3	5.9
16. Ellsworth - Hancock County	2.7	3.6	4.2	4.9	5.4	6.0

THE PINES PORTLAND T36 T16199

SuE2 (Joins sheet 67) SuE2

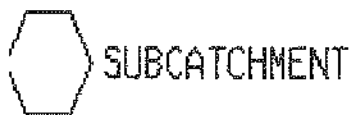
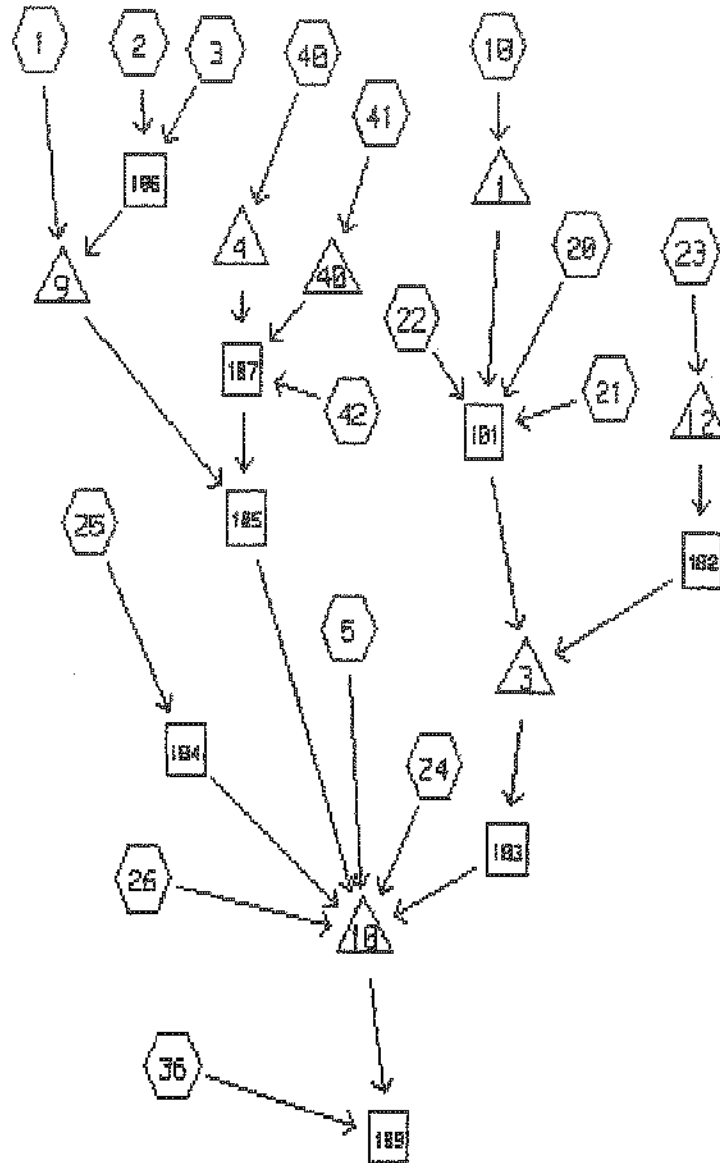


# THE PINES CN BASED ON SOILS

7/6/99

Area	Approximate Soil Group	Size	CH
1 Summit St to Hro Alleyway	DE d Wm <sup>+</sup> 75 61 wm <sup>A</sup> B	1201 Ur. R6s	14
2 Summit St H.	1/8 3/16 DE 2/6 Au <sup>C</sup> 61 75 83	2605	
3 NE.	1/6 Sp 2/6 Sa 3/6 Au <sup>C</sup> D D C 87 75	22.0	
4. <del>W of Greenwood</del>	<del>HE 3/10 (81)</del>		
5. South of Greenwood	1/2 SA 1/4 De 1/4 Au <sup>C</sup> OB 75 C 83 B C C/0	36.7	
10 School to Ave - Ave	1/3 De 1/3 Hr 1/3 Au/Sp 75 83 85 C B	48	
20 Corner Virginia Ave, Ray	1/2 Au De 1/2 B 75 D C	4.6	
21 S. East of Wyoming	1/2 Sn 1/2 B <sub>0</sub> 87 83 C/0	1.4	
22 PINE GROVE	2/3 Hs 1/3 Hr 85	15.5	
23 Ray + Alley	1/2 Hr 1/2 Sn (85) C C/0	11.0	
24 S. PINE GROVE	1/2 Bu 1/2 Hr (85) B 75 C/0	8.6	
25 Racine St.	1/2 De 1/2 Hr <sup>85</sup> D D C/0 (85)	10.3	
26 THE SITE	2/3 Sn 1/6 Sp 1/6 Hr (85) C/0 D (85)	43.5	
36 Below Penn	2/3 Hr 1/3 Sn (85)	3.4	

WATERSHED ROUTING =====



SUBCATCHMENT



REACH



POND



LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

TYPE III 24-HOUR RAINFALL= 3.00 IN

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SUBCATCHMENT 2	= SUMMIT NORTH	->	REACH 106
SUBCATCHMENT 3	= NORTH WEST	->	REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	->	POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	->	POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	->	REACH 101
SUBCATCHMENT 21	= EAST OF WYOMING	->	REACH 101
SUBCATCHMENT 22	= PINE GROVE	->	REACH 101
SUBCATCHMENT 23	= RAY ALLEN	->	POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	->	POND 10
SUBCATCHMENT 25	= RACINE ST	->	REACH 104
SUBCATCHMENT 26	= THE SITE	->	POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	->	REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	->	POND 4
SUBCATCHMENT 41	= NORTH OF LEDGEWOOD	->	POND 40
SUBCATCHMENT 42	= NORTEAST OF LEDGEWOOD	->	REACH 107
REACH 101	= STREAM	->	POND 3
REACH 102	= STREAM RAY TO VIRGINIA	->	POND 3
REACH 103	= STREAM TO POND	->	POND 10
REACH 104	= STREAM TO POND	->	POND 10
REACH 105	= STREAM TO POND	->	POND 10
REACH 106	= STORM DRAIN	->	POND 9
REACH 107	=	->	REACH 105
REACH 109	= STREAM	->	
POND 1	= CULVERT AND CB AT ALLEN	->	REACH 101
POND 3	= CULVERT AT VIRGINIA	->	REACH 103
POND 4	= CULVERT AT LEDGEWOOD	->	REACH 107
POND 9	= EXISTING CULVERT AND CB ON ALLEN	->	REACH 105
POND 10	= POND ON SITE	->	REACH 109

POND 12	= DETENTION ABOVE RAY	->	REACH 102
POND 40	= CULVERT AT LEDGEWOOD	->	REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--			WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75	50%61		68	-	4.22	12.44	.56
2	26.50	40.9	50%75	17%83	33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75	50%83		79	-	20.23	12.24	2.00
5	36.70	34.4	50%87	25%75	25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85	33%83	33%75	81	-	28.68	12.78	4.76
20	4.60	23.1	50%78	50%71		75	-	3.07	12.31	.33
21	1.40	9.8	50%80	50%74		77	-	1.44	12.11	.11
22	8.60	47.1	100%78			78	-	4.96	12.63	.73
23	11.00	32.3	100%85			85	-	11.13	12.41	1.33
24	8.60	30.0	100%85			85	-	8.97	12.38	1.04
25	10.30	14.4	100%85			85	-	14.03	12.16	1.25
26	43.50	43.0	100%78			78	-	26.33	12.58	3.70
36	3.40	20.0	100%78			78	-	2.91	12.25	.29
40	31.00	63.3	100%72			72	-	10.00	12.89	1.84
41	3.10	74.0	50%77	50%66		72	-	.90	13.04	.18
42	2.00	43.6	100%72			72	-	.80	12.62	.12



REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	4.1	1.6	30.36
102	-	3.0	3.0	.20	.20	.035	650	.0050	1.9	5.8	9.44
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.6	3.1	36.00
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	700	.0050	2.7	4.4	48.55

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	112.5	.45	28.68	25.69			10	13.3
3	88.0	96.0	92.7	.50	39.11	36.17			8	14.3
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.5	9.42	117.6	48.26			59	87.0
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
40	110.0	114.0	110.4	.01	.90	.90			0	2.3

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 1

## SUMMIT TO ALLEN NORTH

PEAK= 4.22 CFS @ 12.44 HRS, VOLUME= .56 AF

ACRES	CN	
6.00	75	.25 AC LOTS C SOILS
6.10	61	.25 AC LOTS B SOILS
12.10	68	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense n=.24 L=100' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	11.5
Woodland Kv=5 L=600' s=.03 '/' V=.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	5.1
Short Grass Pasture Kv=7 L=300' s=.02 '/' V=.99 fps		
Total Length= 1000 ft		Total Tc= 29.1

## SUBCATCHMENT 2

## SUMMIT NORTH

PEAK= 11.01 CFS @ 12.58 HRS, VOLUME= 1.59 AF

ACRES	CN	
13.25	75	.25 AC LOTS B SOILS
4.40	83	.25 AC LOTS C SOILS
8.85	61	.25 AC LOTS A SOILS
26.50	72	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	11.2
Grass: Dense n=.24 L=100' P2=3 in s=.04 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	15.4
Woodland Kv=5 L=800' s=.03 '/' V=.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	14.3
Short Grass Pasture Kv=7 L=600' s=.01 '/' V=.7 fps		
Total Length= 1500 ft		Total Tc= 40.9

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 3

## NORTH WEST

PEAK= 20.23 CFS @ 12.24 HRS, VOLUME= 2.00 AF

ACRES	CN
11.00	75
11.00	83
22.00	79

.25 AC LOTS C SOILS  
.25 AC LOTS D SOILSSCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense n=.24 L=100' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.0
Paved Kv=20.3282 L=250' s=.04 '/' V=4.07 fps		
CIRCULAR CHANNEL	STORM DRAIN	5.9
18" Diameter a=1.77 sq-ft Pw=4.7' r=.375'		
s=.005 '/' n=.013 V=4.2 fps L=1500' Capacity=7.4 cfs		
Total Length= 1850 ft		Total Tc= 19.4

## SUBCATCHMENT 5

## SOUTH OF LEDGEWOOD

PEAK= 32.72 CFS @ 12.44 HRS, VOLUME= 4.05 AF

ACRES	CN
18.30	87
9.30	75
9.10	83
36.70	83

D SOILS  
.25 AC LOTS B SOILS  
.25 AC LOTS C SOILSSCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	14.7
Grass: Dense n=.24 L=100' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	16.8
Short Grass Pasture Kv=7 L=1000' s=.02 '/' V=.99 fps		
CHANNEL FLOW	STREAM	2.9
a=40 sq-ft Pw=20' r=2'		
s=.0075 '/' n=.035 V=5.84 fps L=1000' Capacity=233.5 cfs		
Total Length= 2100 ft		Total Tc= 34.4

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 10

## SCHOOL TO ALLEN

PEAK= 28.68 CFS @ 12.78 HRS, VOLUME= 4.76 AF

ACRES	CN		SCS TR-20 METHOD
16.00	85	C/D SOILS	TYPE III 24-HOUR
16.00	83	C SOILS	RAINFALL= 3.00 IN
16.00	75	B SOILS	SPAN= 10-20 HRS, dt=.1 HRS
48.00	81		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	25.7
Grass: Dense n=.24 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	33.7
Woodland Kv=5 L=1600' s=.025 '/' V=.79 fps		
Total Length= 1800 ft		Total Tc= 59.4

## SUBCATCHMENT 20

## CORNER RAY ALLEN VIRGINIA

PEAK= 3.07 CFS @ 12.31 HRS, VOLUME= .33 AF

ACRES	CN		SCS TR-20 METHOD
2.30	78	C SOILS	TYPE III 24-HOUR
2.30	71	B SOILS	RAINFALL= 3.00 IN
4.60	75		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	21.8
Grass: Dense n=.24 L=200' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.3
Short Grass Pasture Kv=7 L=120' s=.05 '/' V=1.57 fps		
Total Length= 320 ft		Total Tc= 23.1

## SUBCATCHMENT 21

## EAST OF WYOMING

PEAK= 1.44 CFS @ 12.11 HRS, VOLUME= .11 AF

ACRES	CN		SCS TR-20 METHOD
.70	80	D SOILS	TYPE III 24-HOUR
.70	74	C SOILS	RAINFALL= 3.00 IN
1.40	77		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	9.8
Grass: Dense n=.24 L=120' P2=3 in s=.08 '/'		

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 22

## PINE GROVE

PEAK= 4.96 CFS @ 12.63 HRS, VOLUME= .73 AF

ACRES	CN
8.60	78

C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	35.3
Woods: Light underbrush	n=.4 L=200' P2=3 in s=.025 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	11.8
Woodland	Kv=5 L=750' s=.045 '/' V=1.06 fps	
Total Length= 950 ft		Total Tc= 47.1

## SUBCATCHMENT 23

## RAY ALLEN

PEAK= 11.13 CFS @ 12.41 HRS, VOLUME= 1.33 AF

ACRES	CN
11.00	85

C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	25.7
Grass: Dense	n=.24 L=200' P2=3 in s=.02 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	6.0
Short Grass Pasture	Kv=7 L=500' s=.04 '/' V=1.4 fps	
CIRCULAR CHANNEL	TO OUTLET	.6
24" Diameter	a=3.14 sq-ft Pw=6.3' r=.5'	
s=.01 '/'	n=.013 V=7.2 fps L=250' Capacity=22.6 cfs	
Total Length= 950 ft		Total Tc= 32.3

TYPE III 24-HOUR RAINFALL= 3.00 IN

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SUBCATCHMENT 24 EAST OF PINE GROVE

PEAK= 8.97 CFS @ 12.38 HRS, VOLUME= 1.04 AF

<u>ACRES</u>	<u>CN</u>	
8.60	85	C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	25.7
Grass: Dense n=.24 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	3.5
Paved Kv=20.3282 L=600' s=.02 '/' V=2.87 fps		
CIRCULAR CHANNEL	TO OUTLET	.8
15" Diameter a=1.23 sq-ft Pw=3.9' r=.313'		
s=.01 '/' n=.013 V=5.26 fps L=250' Capacity=6.5 cfs		
Total Length= 1050 ft		Total Tc= 30.0

SUBCATCHMENT 25 RACINE ST

PEAK= 14.03 CFS @ 12.16 HRS, VOLUME= 1.25 AF

<u>ACRES</u>	<u>CN</u>	
10.30	85	C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	10.2
Grass: Dense n=.24 L=100' P2=3 in s=.05 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	3.2
Short Grass Pasture Kv=7 L=300' s=.05 '/' V=1.57 fps		
CIRCULAR CHANNEL	STORMDRAIN	1.0
18" Diameter a=1.77 sq-ft Pw=4.7' r=.375'		
s=.02 '/' n=.013 V=8.41 fps L=500' Capacity=14.9 cfs		
Total Length= 900 ft		Total Tc= 14.4

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 26

## THE SITE

PEAK= 26.33 CFS @ 12.58 HRS, VOLUME= 3.70 AF

ACRES	CN
43.50	78

 C/D SOILS

 SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense n=.24 L=100' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	6.9
Short Grass Pasture Kv=7 L=500' s=.03 '/' V=1.21 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	23.6
Short Grass Pasture Kv=7 L=700' s=.005 '/' V=.49 fps		
Total Length= 1300 ft		Total Tc= 43.0

## SUBCATCHMENT 36

## AREA BELOW PENN AVE

PEAK= 2.91 CFS @ 12.25 HRS, VOLUME= .29 AF

ACRES	CN
3.40	78

 WOODS C/D SOILS

 SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	17.6
Woods: Light underbrush n=.4 L=150' P2=3 in s=.08 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	2.4
Woodland Kv=5 L=200' s=.08 '/' V=1.41 fps		
Total Length= 350 ft		Total Tc= 20.0



TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 40

## NORTH OF LEDGEWOOD

PEAK= 10.00 CFS @ 12.89 HRS, VOLUME= 1.84 AF

ACRES	CN	
31.00	72	C/D SOILS WOODS

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	33.9
Grass: Dense n=.24 L=200' P2=3 in s=.01 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	26.7
Woodland Kv=5 L=800' s=.01 '/' V=.5 fps		
CHANNEL FLOW	CHANNEL	2.7
a=15 sq-ft Pw=12' r=1.25'		
s=.01 '/' n=.035 V=4.93 fps L=800' Capacity=73.9 cfs		
Total Length= 1800 ft		Total Tc= 63.3

## SUBCATCHMENT 41

## NORTH OF LEDGEWOOD

PEAK= .90 CFS @ 13.04 HRS, VOLUME= .18 AF

ACRES	CN	
1.55	77	D SOILS
1.55	66	B SOILS
3.10	72	

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	67.2
Woods: Dense underbrush n=.8 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	6.8
Woodland Kv=5 L=250' s=.015 '/' V=.61 fps		
Total Length= 450 ft		Total Tc= 74.0

## SUBCATCHMENT 42

## NORTEAST OF LEDGEWOOD

PEAK= .80 CFS @ 12.62 HRS, VOLUME= .12 AF

ACRES	CN	
2.00	72	C/D SOILS

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	38.6
Woods: Light underbrush n=.4 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	5.0
Woodland Kv=5 L=150' s=.01 '/' V=.5 fps		
Total Length= 350 ft		Total Tc= 43.6

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH 101

## STREAM

Qin = 30.45 CFS @ 12.92 HRS, VOLUME= 5.87 AF  
 Qout= 30.36 CFS @ 12.96 HRS, VOLUME= 5.86 AF, ATTEN= 0%, LAG= 2.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	3' x 5' CHANNEL SIDE SLOPE= .3 '/'	STOR-IND+TRANS METHOD
0.00	0.00	0.00	n= .035	PEAK DEPTH= 1.09 FT
.50	2.33	6.14	LENGTH= 400 FT	PEAK VELOCITY= 4.1 FPS
1.00	6.33	24.35	SLOPE= .015 FT/FT	TRAVEL TIME = 1.6 MIN
1.50	12.00	57.86		SPAN= 10-20 HRS, dt=.1 HRS
2.15	21.86	129.54		
3.00	39.00	281.24		
4.00	65.33	560.36		
5.00	98.33	967.15		

## REACH 102

## STREAM RAY TO VIRGINIA

Qin = 9.57 CFS @ 12.57 HRS, VOLUME= 1.31 AF  
 Qout= 9.44 CFS @ 12.75 HRS, VOLUME= 1.31 AF, ATTEN= 1%, LAG= 10.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	3' x 3' CHANNEL SIDE SLOPE= .2 '/'	STOR-IND+TRANS METHOD
0.00	0.00	0.00	n= .035	PEAK DEPTH= .74 FT
.30	1.35	1.49	LENGTH= 650 FT	PEAK VELOCITY= 1.9 FPS
.60	3.60	5.82	SLOPE= .005 FT/FT	TRAVEL TIME = 5.8 MIN
.90	6.75	13.67		SPAN= 10-20 HRS, dt=.1 HRS
1.29	12.19	30.33		
1.80	21.60	65.34		
2.40	36.00	129.41		
3.00	54.00	222.46		

## REACH 103

## STREAM TO POND

Qin = 36.17 CFS @ 13.12 HRS, VOLUME= 7.12 AF  
 Qout= 36.00 CFS @ 13.21 HRS, VOLUME= 7.09 AF, ATTEN= 0%, LAG= 5.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	2' x 3' CHANNEL SIDE SLOPE= .2 '/'	STOR-IND+TRANS METHOD
0.00	0.00	0.00	n= .035	PEAK DEPTH= 1.44 FT
.30	1.05	1.10	LENGTH= 500 FT	PEAK VELOCITY= 2.6 FPS
.60	3.00	4.64	SLOPE= .005 FT/FT	TRAVEL TIME = 3.1 MIN
.90	5.85	11.41		SPAN= 10-20 HRS, dt=.1 HRS
1.29	10.90	26.27		
1.80	19.80	58.35		
2.40	33.60	118.24		
3.00	51.00	206.36		

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH 104

## STREAM TO POND

Qin = 14.03 CFS @ 12.16 HRS, VOLUME= 1.25 AF

Qout= 12.94 CFS @ 12.34 HRS, VOLUME= 1.25 AF, ATTEN= 8%, LAG= 10.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)		STOR-IND+TRANS METHOD
0.00	0.0	0.00	5' x 4' CHANNEL	PEAK DEPTH= .73 FT
.40	2.8	3.84	SIDE SLOPE= .2 '/'	PEAK VELOCITY= 2.0 FPS
.80	7.2	14.46	n= .035	TRAVEL TIME = 5.9 MIN
1.20	13.2	33.17	LENGTH= 700 FT	SPAN= 10-20 HRS, dt=.1 HRS
1.72	23.4	71.98	SLOPE= .005 FT/FT	
2.40	40.8	152.14		
3.20	67.2	296.94		
4.00	100.0	505.33		

## REACH 105

## STREAM TO POND

Qin = 26.83 CFS @ 12.67 HRS, VOLUME= 6.02 AF

Qout= 26.65 CFS @ 12.78 HRS, VOLUME= 5.98 AF, ATTEN= 1%, LAG= 8.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)		STOR-IND+TRANS METHOD
0.00	0.0	0.00	5' x 4' CHANNEL	PEAK DEPTH= 1.06 FT
.40	2.8	3.84	SIDE SLOPE= .2 '/'	PEAK VELOCITY= 2.4 FPS
.80	7.2	14.46	n= .035	TRAVEL TIME = 3.5 MIN
1.20	13.2	33.17	LENGTH= 500 FT	SPAN= 10-20 HRS, dt=.1 HRS
1.72	23.4	71.98	SLOPE= .005 FT/FT	
2.40	40.8	152.14		
3.20	67.2	296.94		
4.00	100.0	505.33		

## REACH 106

## STORM DRAIN

Qin = 26.30 CFS @ 12.32 HRS, VOLUME= 3.59 AF

Qout= 25.87 CFS @ 12.37 HRS, VOLUME= 3.58 AF, ATTEN= 2%, LAG= 3.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)		STOR-IND+TRANS METHOD
0.00	0.00	0.00	30" PIPE	PEAK DEPTH= 1.87 FT
.25	.26	.61	n= .013	PEAK VELOCITY= 6.7 FPS
.50	.70	2.54	LENGTH= 600 FT	TRAVEL TIME = 1.5 MIN
.75	1.24	5.68	SLOPE= .005 FT/FT	SPAN= 10-20 HRS, dt=.1 HRS
1.75	3.67	24.28		
2.00	4.21	28.35		
2.25	4.65	30.91		
2.35	4.79	31.20		
2.43	4.87	30.91		
2.50	4.91	29.00		

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH 107

Qin = 7.38 CFS @ 13.41 HRS, VOLUME= 1.96 AF

Qout= 7.35 CFS @ 13.55 HRS, VOLUME= 1.95 AF, ATTEN= 0%, LAG= 8.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	2' x 2' CHANNEL	STOR-IND+TRANS METHOD
0.00	0.0	0.00	SIDE SLOPE= .02 '/'	PEAK DEPTH= .22 FT
.20	2.4	5.20	n= .035	PEAK VELOCITY= 2.5 FPS
.40	8.8	29.47	LENGTH= 700 FT	TRAVEL TIME = 4.7 MIN
.60	19.2	83.42	SLOPE= .05 FT/FT	SPAN= 10-20 HRS, dt=.1 HRS
.86	38.7	212.44		
1.20	74.4	507.88		
1.60	131.2	1082.08		
2.00	204.0	1949.22		

## REACH 109

## STREAM

Qin = 48.62 CFS @ 14.00 HRS, VOLUME= 19.31 AF

Qout= 48.55 CFS @ 14.13 HRS, VOLUME= 19.10 AF, ATTEN= 0%, LAG= 7.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	10' x 4' CHANNEL	STOR-IND+TRANS METHOD
0.00	0.0	0.00	SIDE SLOPE= .2 '/'	PEAK DEPTH= 1.15 FT
.40	4.8	7.03	n= .035	PEAK VELOCITY= 2.7 FPS
.80	11.2	24.36	LENGTH= 700 FT	TRAVEL TIME = 4.4 MIN
1.20	19.2	52.27	SLOPE= .005 FT/FT	SPAN= 10-20 HRS, dt=.1 HRS
1.72	32.0	106.13		
2.40	52.8	210.61		
3.20	83.2	390.07		
4.00	120.0	639.06		

POND 1 CULVERT AND CB AT ALLEN

Qin = 28.68 CFS @ 12.78 HRS, VOLUME= 4.76 AF  
 Qout= 25.69 CFS @ 13.01 HRS, VOLUME= 4.69 AF, ATTEN= 10%, LAG= 13.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	4000	0	0	PEAK STORAGE = 19446 CF
112.0	8000	12000	12000	PEAK ELEVATION= 112.5 FT
114.0	20000	28000	40000	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 15.4 MIN (4.64 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.01 L=45' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

POND 3 CULVERT AT VIRGINIA

Qin = 39.11 CFS @ 12.88 HRS, VOLUME= 7.16 AF  
 Qout= 36.17 CFS @ 13.12 HRS, VOLUME= 7.12 AF, ATTEN= 8%, LAG= 14.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
88.0	50	0	0	PEAK STORAGE = 21848 CF
90.0	5000	5050	5050	PEAK ELEVATION= 92.7 FT
94.0	7500	25000	30050	FLOOD ELEVATION= 96.0 FT
96.0	8500	16000	46050	START ELEVATION= 88.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 8.5 MIN (7.05 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	88.0'	30" CULVERT n=.023 L=65' S=.01'/' Ke=.5 Cc=.9 Cd=.6 TW=2'
2	P	93.4'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND 4

## CULVERT AT LEDGEWOOD

Qin = 10.00 CFS @ 12.89 HRS, VOLUME= 1.84 AF

Qout= 6.32 CFS @ 13.48 HRS, VOLUME= 1.66 AF, ATTEN= 37%, LAG= 35.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	12000	0	0	PEAK STORAGE = 21518 CF
112.0	20000	32000	32000	PEAK ELEVATION= 111.3 FT
114.0	24000	44000	76000	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 72.8 MIN (1.66 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	24" CULVERT n=.023 L=55' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	25' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

## POND 9

## EXISTING CULVERT AND CB ON ALLEN

Qin = 30.00 CFS @ 12.39 HRS, VOLUME= 4.14 AF

Qout= 25.45 CFS @ 12.62 HRS, VOLUME= 4.07 AF, ATTEN= 15%, LAG= 13.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	4000	0	0	PEAK STORAGE = 19178 CF
112.0	8000	12000	12000	PEAK ELEVATION= 112.5 FT
114.0	20000	28000	40000	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 16.1 MIN (4.07 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.01 L=45' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

POND 10

POND ON SITE

Qin = 117.6 CFS @ 12.55 HRS, VOLUME= 23.12 AF  
 Qout= 48.26 CFS @ 14.00 HRS, VOLUME= 19.01 AF, ATTEN= 59%, LAG= 87.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
100.0	5.70	0.00	0.00	PEAK STORAGE = 9.42 AF
102.0	6.80	12.50	12.50	PEAK ELEVATION= 101.5 FT
104.0	7.00	13.80	26.30	FLOOD ELEVATION= 104.0 FT
				START ELEVATION= 100.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 134.4 MIN (19.01 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	100.0'	10' BROAD-CRESTED RECTANGULAR WEIR X 1.81 $Q=C L H^{1.5}$ C=1.48, 1.45, 1.44, 1.44, 1.43, 0, 0, 0

POND 12

DETENTION ABOVE RAY

Qin = 11.13 CFS @ 12.41 HRS, VOLUME= 1.33 AF  
 Qout= 9.57 CFS @ 12.57 HRS, VOLUME= 1.31 AF, ATTEN= 14%, LAG= 9.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
108.0	1000	0	0	PEAK STORAGE = 6590 CF
110.0	5500	6500	6500	PEAK ELEVATION= 110.0 FT
112.0	9500	15000	21500	FLOOD ELEVATION= 114.0 FT
114.0	15000	24500	46000	START ELEVATION= 108.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 17.2 MIN (1.31 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	108.0'	18" CULVERT $n=.01$ L=50' S=.01'/' $Ke=.5$ $Cc=.9$ $Cd=.6$
2	P	113.5'	35' BROAD-CRESTED RECTANGULAR WEIR X 1.81 $Q=C L H^{1.5}$ C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

POND 40

CULVERT AT LEDGEWOOD

Qin = .90 CFS @ 13.04 HRS, VOLUME= .18 AF  
 Qout= .90 CFS @ 13.08 HRS, VOLUME= .18 AF, ATTEN= 0%, LAG= 2.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	100	0	0	PEAK STORAGE = 231 CF
113.0	1000	1650	1650	PEAK ELEVATION= 110.4 FT
114.0	1500	1250	2900	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 6.7 MIN (.18 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	18" CULVERT n=.01 L=45' S=.02'/1' Ke=.5 Cc=.9 Cd=.6
2	P	113.0'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0



TYPE III 24-HOUR RAINFALL= 4.70 IN

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	12.94	12.39	1.53
2	26.50	40.9	50%75 17%83 33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75 50%83	79	-	44.41	12.23	4.28
5	36.70	34.4	50%87 25%75 25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85 33%83 33%75	81	-	60.41	12.76	9.91
20	4.60	23.1	50%78 50%71	75	-	7.41	12.29	.78
21	1.40	9.8	50%80 50%74	77	-	3.29	12.10	.26
22	8.60	47.1	100%78	78	-	11.15	12.61	1.61
23	11.00	32.3	100%85	85	-	21.57	12.40	2.57
24	8.60	30.0	100%85	85	-	17.39	12.36	2.01
25	10.30	14.4	100%85	85	-	27.14	12.15	2.40
26	43.50	43.0	100%78	78	-	59.10	12.55	8.15
36	3.40	20.0	100%78	78	-	6.54	12.23	.64
40	31.00	63.3	100%72	72	-	26.66	12.84	4.59
41	3.10	74.0	50%77 50%66	72	-	2.41	12.98	.46
42	2.00	43.6	100%72	72	-	2.13	12.58	.30

TYPE III 24-HOUR RAINFALL= 4.70 IN

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	5.2	1.3	74.44
102	-	3.0	3.0	.20	.20	.035	650	.0050	2.1	5.3	14.21
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.3	2.5	86.26
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20	.20	.035	700	.0050	3.5	3.4	122.4

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- Q <sub>in</sub> (CFS)	PEAK FLOW Q <sub>out</sub> (CFS)	----- Q <sub>pri</sub> (CFS)	----- Q <sub>sec</sub> (CFS)	---Q <sub>out</sub> --- ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.8	.86	60.41	60.51			0	3.2
3	88.0	96.0	93.9	.67	88.65	90.63			0	.1
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	102.8	18.07	233.4	121.7			48	66.9
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
40	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	4.60	23.1	50%78 50%71	75	-	9.65	12.28	1.01
21	1.40	9.8	50%80 50%74	77	-	4.22	12.10	.33
22	8.60	47.1	100%78	78	-	14.27	12.60	2.05
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.60	30.0	100%85	85	-	21.43	12.36	2.47
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%78	78	-	75.78	12.54	10.40
36	3.40	20.0	100%78	78	-	8.37	12.23	.81
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	5.6	1.2	95.18
102	-	3.0	3.0	.20	.20	.035	650	.0050	2.1	5.1	16.02
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.5	2.4	108.3
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20	.20	.035	700	.0050	3.7	3.1	158.4

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.9	.89	76.17	76.07			0	2.3
3	88.0	96.0	94.0	.70	110.9	113.4			0	0.0
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	103.3	21.70	308.4	157.6			49	58.4
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
40	110.0	114.0	110.8	.01	3.21	3.21			0	1.4

TYPE III 24-HOUR RAINFALL= 6.70 IN

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REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	5.9	1.1	123.1
102	-	3.0	3.0	.20	.20	.035	650	.0050	2.2	4.9	18.18
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.7	2.3	139.7
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.7	4.3	40.21
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.3	2.5	87.32
106	30.0	-	-	-	-	.013	600	.0050	6.6	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.9	3.0	51.65
109	-	10.0	4.0	.20	.20	.035	700	.0050	4.1	2.9	221.6

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 6.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	25.38	12.37	2.93
2	26.50	40.9	50%75 17%83 33%61	72	-	53.86	12.52	7.22
3	22.00	19.4	50%75 50%83	79	-	74.95	12.22	7.17
5	36.70	34.4	50%87 25%75 25%83	83	-	106.6	12.42	13.03
10	48.00	59.4	33%85 33%83 33%75	81	-	100.1	12.74	16.36
20	4.60	23.1	50%78 50%71	75	-	13.12	12.28	1.36
21	1.40	9.8	50%80 50%74	77	-	5.66	12.10	.44
22	8.60	47.1	100%78	78	-	19.06	12.59	2.74
23	11.00	32.3	100%85	85	-	34.13	12.39	4.06
24	8.60	30.0	100%85	85	-	27.52	12.36	3.17
25	10.30	14.4	100%85	85	-	43.63	12.15	3.78
26	43.50	43.0	100%78	78	-	101.2	12.54	13.85
36	3.40	20.0	100%78	78	-	11.18	12.23	1.08
40	31.00	63.3	100%72	72	-	49.38	12.81	8.40
41	3.10	74.0	50%77 50%66	72	-	4.47	12.95	.84
42	2.00	43.6	100%72	72	-	3.93	12.56	.54



TYPE III 24-HOUR RAINFALL= 6.70 IN

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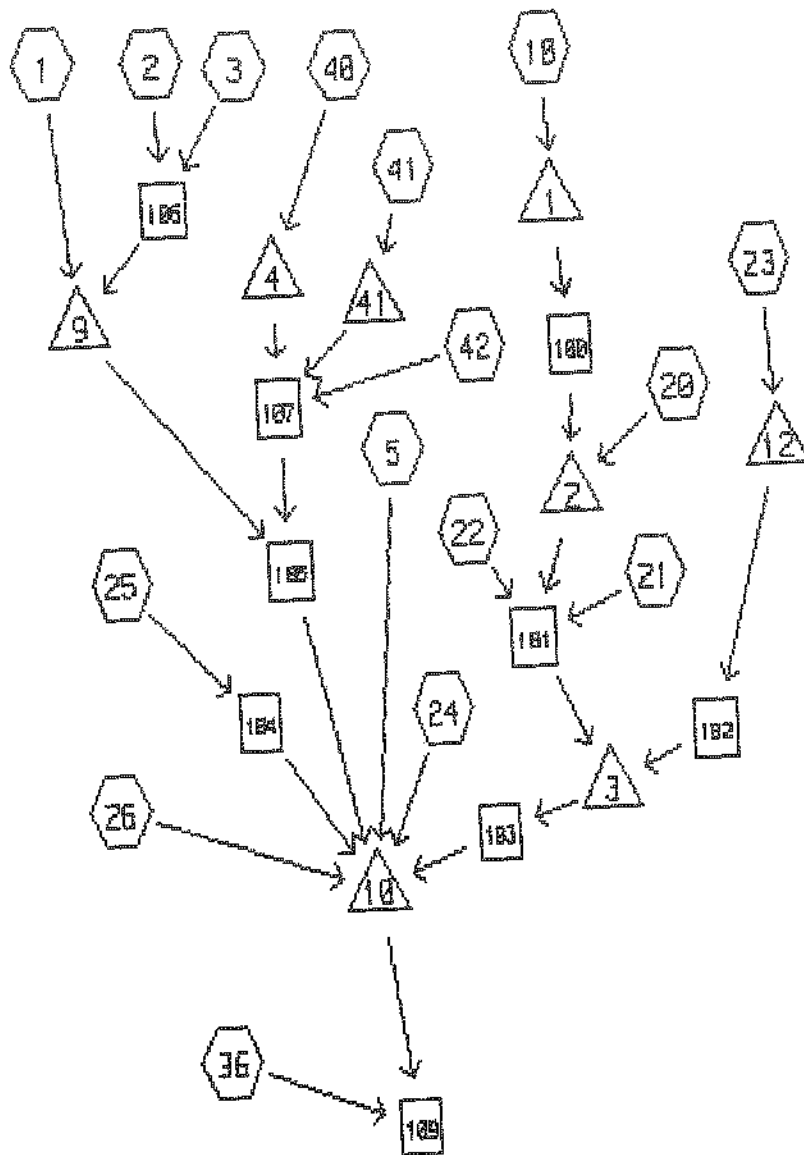
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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	114.1	.95	100.1	99.80			0	1.4
3	88.0	96.0	94.2	.73	141.0	140.6			0	.4
4	110.0	114.0	114.0	1.75	49.38	45.82			7	13.0
9	110.0	114.0	113.8	.84	54.38	56.24			0	3.9
10	100.0	104.0	104.2	27.49	417.1	220.6			47	52.6
12	108.0	114.0	113.3	.87	34.13	18.23			47	24.2
40	110.0	114.0	111.0	.01	4.47	4.46			0	1.4

WATERSHED ROUTING



SUBCATCHMENT



REACH



POND



LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

SUBCATCHMENT 2	= SUMMIT NORTH	-> REACH 106
SUBCATCHMENT 3	= NORTH WEST	-> REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	-> POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	-> POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	-> POND 2
SUBCATCHMENT 21	= EAST OF WYOMING	-> REACH 101
SUBCATCHMENT 22	= PINE GROVE	-> REACH 101
SUBCATCHMENT 23	= RAY ALLEN	-> POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	-> POND 10
SUBCATCHMENT 25	= RACINE ST	-> REACH 104
SUBCATCHMENT 26	= THE SITE	-> POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	-> REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	-> POND 4
SUBCATCHMENT 41	= NORTH OF LEDGWOOD	-> POND 41
SUBCATCHMENT 42	= NORTHEAST OF LEDGEWOOD	-> REACH 107
REACH 100	= STREAM	-> POND 2
REACH 101	= STREAM	-> POND 3
REACH 102	= STREAM RAY TO VIRGINIA	-> POND 3
REACH 103	= STREAM TO POND	-> POND 10
REACH 104	= STREAM TO POND	-> POND 10
REACH 105	= STREAM TO POND	-> POND 10
REACH 106	= STORM DRAIN	-> POND 9
REACH 107	=	-> REACH 105
REACH 109	= STREAM	->
POND 1	= EXISTING DETENTION ON ALLEN	-> REACH 100
POND 2	= WYOMING DETENTION	-> REACH 101
POND 3	= CULVERT AT VIRGINIA	-> REACH 103
POND 4	= CULVERT AT LEDGEWOOD	-> REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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POND 9	= CULVERT AND CB AT ALLEN	->	REACH 105
POND 10	= POND ON SITE	->	REACH 109
POND 12	= DETENTION ABOVE RAY	->	REACH 102
POND 41	= CULVERT AT LEDGWOOD	->	REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--			WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75	50%61		68	-	4.22	12.44	.56
2	26.50	40.9	50%75	17%83	33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75	50%83		79	-	20.23	12.24	2.00
5	36.70	34.4	50%87	25%75	25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85	33%83	33%75	81	-	28.68	12.78	4.76
20	4.60	23.1	50%83	50%75		79	-	3.92	12.30	.42
21	1.40	9.8	50%87	50%83		85	-	2.20	12.10	.17
22	8.60	47.1	100%78			78	-	4.96	12.63	.73
23	11.00	32.3	100%85			85	-	11.13	12.41	1.33
24	8.60	30.0	100%85			85	-	8.97	12.38	1.04
25	10.30	14.4	100%85			85	-	14.03	12.16	1.25
26	43.50	43.0	100%85			85	-	38.26	12.55	5.26
36	3.40	13.4	100%85			85	-	4.84	12.14	.41
40	31.00	63.3	100%72			72	-	10.00	12.89	1.84
41	3.10	74.0	50%77	50%66		72	-	.90	13.04	.18
42	2.00	43.6	100%72			72	-	.80	12.62	.12

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	4.0	.4	27.04
101	-	3.0	5.0	.30	.30	.035	300	.0150	4.2	1.2	31.07
102	-	3.0	3.0	.20	.20	.035	650	.0050	1.9	5.8	9.44
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.7	3.1	36.84
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	300	.0050	2.6	1.9	43.40

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----			---Qout---		
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	112.6	.25	28.68	27.06			6	9.3
2	90.0	98.0	92.6	.19	28.06	27.48			2	7.1
3	88.0	96.0	92.8	.52	39.72	36.98			7	16.2
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.8	11.43	130.9	43.02			67	96.4
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
41	110.0	114.0	110.4	.01	.90	.90			0	2.3

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 1

## SUMMIT TO ALLEN NORTH

PEAK= 4.22 CFS @ 12.44 HRS, VOLUME= .56 AF

ACRES	CN	
6.00	75	.25 AC LOTS C SOILS
6.10	61	.25 AC LOTS B SOILS
12.10	68	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense n=.24 L=100' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	11.5
Woodland Kv=5 L=600' s=.03 '/' V=.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	5.1
Short Grass Pasture Kv=7 L=300' s=.02 '/' V=.99 fps		
Total Length= 1000 ft		Total Tc= 29.1

## SUBCATCHMENT 2

## SUMMIT NORTH

PEAK= 11.01 CFS @ 12.58 HRS, VOLUME= 1.59 AF

ACRES	CN	
13.25	75	.25 AC LOTS B SOILS
4.40	83	.25 AC LOTS C SOILS
8.85	61	.25 AC LOTS A SOILS
26.50	72	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	11.2
Grass: Dense n=.24 L=100' P2=3 in s=.04 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	15.4
Woodland Kv=5 L=800' s=.03 '/' V=.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	14.3
Short Grass Pasture Kv=7 L=600' s=.01 '/' V=.7 fps		
Total Length= 1500 ft		Total Tc= 40.9



TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 3 NORTH WEST

PEAK= 20.23 CFS @ 12.24 HRS, VOLUME= 2.00 AF

ACRES	CN		SCS TR-20 METHOD
11.00	75	.25 AC LOTS C SOILS	TYPE III 24-HOUR
11.00	83	.25 AC LOTS D SOILS	RAINFALL= 3.00 IN
22.00	79		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense n=.24 L=100' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.0
Paved Kv=20.3282 L=250' s=.04 '/' V=4.07 fps		
CIRCULAR CHANNEL	STORM DRAIN	5.9
18" Diameter a=1.77 sq-ft Pw=4.7' r=.375'		
s=.005 '/' n=.013 V=4.2 fps L=1500' Capacity=7.4 cfs		
Total Length= 1850 ft		Total Tc= 19.4

## SUBCATCHMENT 5 SOUTH OF LEDGEWOOD

PEAK= 32.72 CFS @ 12.44 HRS, VOLUME= 4.05 AF

ACRES	CN		SCS TR-20 METHOD
18.30	87	D SOILS	TYPE III 24-HOUR
9.30	75	.25 AC LOTS B SOILS	RAINFALL= 3.00 IN
9.10	83	.25 AC LOTS C SOILS	SPAN= 10-20 HRS, dt=.1 HRS
36.70	83		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	14.7
Grass: Dense n=.24 L=100' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	16.8
Short Grass Pasture Kv=7 L=1000' s=.02 '/' V=.99 fps		
CHANNEL FLOW	STREAM	2.9
a=40 sq-ft Pw=20' r=2'		
s=.0075 '/' n=.035 V=5.84 fps L=1000' Capacity=233.5 cfs		
Total Length= 2100 ft		Total Tc= 34.4

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 10

## SCHOOL TO ALLEN

PEAK= 28.68 CFS @ 12.78 HRS, VOLUME= 4.76 AF

ACRES	CN		SCS TR-20 METHOD
16.00	85	C/D SOILS	TYPE III 24-HOUR
16.00	83	C SOILS	RAINFALL= 3.00 IN
16.00	75	B SOILS	SPAN= 10-20 HRS, dt=.1 HRS
48.00	81		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	25.7
Grass: Dense n=.24 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	33.7
Woodland Kv=5 L=1600' s=.025 '/' V=.79 fps		
Total Length= 1800 ft		Total Tc= 59.4

## SUBCATCHMENT 20

## CORNER RAY ALLEN VIRGINIA

PEAK= 3.92 CFS @ 12.30 HRS, VOLUME= .42 AF

ACRES	CN		SCS TR-20 METHOD
2.30	83	C SOILS	TYPE III 24-HOUR
2.30	75	B SOILS	RAINFALL= 3.00 IN
4.60	79		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	21.8
Grass: Dense n=.24 L=200' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.3
Short Grass Pasture Kv=7 L=120' s=.05 '/' V=1.57 fps		
Total Length= 320 ft		Total Tc= 23.1

## SUBCATCHMENT 21

## EAST OF WYOMING

PEAK= 2.20 CFS @ 12.10 HRS, VOLUME= .17 AF

ACRES	CN		SCS TR-20 METHOD
.70	87	D SOILS	TYPE III 24-HOUR
.70	83	C SOILS	RAINFALL= 3.00 IN
1.40	85		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	9.8
Grass: Dense n=.24 L=120' P2=3 in s=.08 '/'		

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## SUBCATCHMENT 24

## EAST OF PINE GROVE

PEAK= 8.97 CFS @ 12.38 HRS, VOLUME= 1.04 AF

ACRES	CN
8.60	85

 C/D SOILS

 SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	25.7
Grass: Dense n=.24 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	3.5
Paved Kv=20.3282 L=600' s=.02 '/' V=2.87 fps		
CIRCULAR CHANNEL	TO OUTLET	.8
15" Diameter a=1.23 sq-ft Pw=3.9' r=.313'		
s=.01 '/' n=.013 V=5.26 fps L=250' Capacity=6.5 cfs		
Total Length= 1050 ft		Total Tc= 30.0

## SUBCATCHMENT 25

## RACINE ST

PEAK= 14.03 CFS @ 12.16 HRS, VOLUME= 1.25 AF

ACRES	CN
10.30	85

 C/D SOILS

 SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	10.2
Grass: Dense n=.24 L=100' P2=3 in s=.05 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	3.2
Short Grass Pasture Kv=7 L=300' s=.05 '/' V=1.57 fps		
CIRCULAR CHANNEL	STORMDRAIN	1.0
18" Diameter a=1.77 sq-ft Pw=4.7' r=.375'		
s=.02 '/' n=.013 V=8.41 fps L=500' Capacity=14.9 cfs		
Total Length= 900 ft		Total Tc= 14.4

SUBCATCHMENT 26

THE SITE

PEAK= 38.26 CFS @ 12.55 HRS, VOLUME= 5.26 AF

ACRES    CN  
 43.50    85    C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	12.5
Grass: Dense    n=.24    L=100'    P2=3 in    s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	6.9
Short Grass Pasture    Kv=7    L=500'    s=.03 '/'	V=1.21 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	23.6
Short Grass Pasture    Kv=7    L=700'    s=.005 '/'	V=.49 fps	
Total Length= 1300 ft		Total Tc= 43.0

SUBCATCHMENT 36

AREA BELOW PENN AVE

PEAK= 4.84 CFS @ 12.14 HRS, VOLUME= .41 AF

ACRES    CN  
 3.40    85    WOODS C/D SOILS

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	11.7
Grass: Dense    n=.24    L=150'    P2=3 in    s=.08 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.7
Short Grass Pasture    Kv=7    L=200'    s=.08 '/'	V=1.98 fps	
Total Length= 350 ft		Total Tc= 13.4

TYPE III 24-HOUR RAINFALL= 3.00 IN

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**SUBCATCHMENT 40 NORTH OF LEDGEWOOD**

PEAK= 10.00 CFS @ 12.89 HRS, VOLUME= 1.84 AF

ACRES	CN	
31.00	72	C/D SOILS WOODS

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	33.9
Grass: Dense n=.24 L=200' P2=3 in s=.01 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	26.7
Woodland Kv=5 L=800' s=.01 '/' V=.5 fps		
CHANNEL FLOW	Segment ID:	2.7
a=15 sq-ft Pw=12' r=1.25'		
s=.01 '/' n=.035 V=4.93 fps L=800' Capacity=73.9 cfs		
Total Length= 1800 ft		Total Tc= 63.3

**SUBCATCHMENT 41 NORTH OF LEDGEWOOD**

PEAK= .90 CFS @ 13.04 HRS, VOLUME= .18 AF

ACRES	CN	
1.55	77	D SOILS WOODS
1.55	66	B SOILS WOODS
3.10	72	

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	67.2
Woods: Dense underbrush n=.8 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	6.8
Woodland Kv=5 L=250' s=.015 '/' V=.61 fps		
Total Length= 450 ft		Total Tc= 74.0

**SUBCATCHMENT 42 NORTHEAST OF LEDGEWOOD**

PEAK= .80 CFS @ 12.62 HRS, VOLUME= .12 AF

ACRES	CN	
2.00	72	WOODS C/D SOILS

SCS TR-20 METHOD  
TYPE III 24-HOUR  
RAINFALL= 3.00 IN  
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	38.6
Woods: Light underbrush n=.4 L=200' P2=3 in s=.02 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	5.0
Woodland Kv=5 L=150' s=.01 '/' V=.5 fps		
Total Length= 350 ft		Total Tc= 43.6

TYPE III 24-HOUR RAINFALL= 3.00 IN

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REACH 100

STREAM

Qin = 27.06 CFS @ 12.94 HRS, VOLUME= 4.72 AF  
 Qout= 27.04 CFS @ 12.96 HRS, VOLUME= 4.72 AF, ATTEN= 0%, LAG= 1.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.50	2.33	6.14
1.00	6.33	24.35
1.50	12.00	57.86
2.15	21.86	129.54
3.00	39.00	281.24
4.00	65.33	560.36
5.00	98.33	967.15

3' x 5' CHANNEL  
 SIDE SLOPE= .3 '/'  
 n= .035  
 LENGTH= 100 FT  
 SLOPE= .015 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= 1.04 FT  
 PEAK VELOCITY= 4.0 FPS  
 TRAVEL TIME = .4 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

REACH 101

STREAM

Qin = 31.13 CFS @ 12.97 HRS, VOLUME= 6.00 AF  
 Qout= 31.07 CFS @ 13.00 HRS, VOLUME= 6.00 AF, ATTEN= 0%, LAG= 1.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.50	2.33	6.14
1.00	6.33	24.35
1.50	12.00	57.86
2.15	21.86	129.54
3.00	39.00	281.24
4.00	65.33	560.36
5.00	98.33	967.15

3' x 5' CHANNEL  
 SIDE SLOPE= .3 '/'  
 n= .035  
 LENGTH= 300 FT  
 SLOPE= .015 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= 1.10 FT  
 PEAK VELOCITY= 4.2 FPS  
 TRAVEL TIME = 1.2 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

REACH 102

STREAM RAY TO VIGINIA

Qin = 9.57 CFS @ 12.57 HRS, VOLUME= 1.31 AF  
 Qout= 9.44 CFS @ 12.75 HRS, VOLUME= 1.31 AF, ATTEN= 1%, LAG= 10.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.35	1.49
.60	3.60	5.82
.90	6.75	13.67
1.29	12.19	30.33
1.80	21.60	65.34
2.40	36.00	129.41
3.00	54.00	222.46

3' x 3' CHANNEL  
 SIDE SLOPE= .2 '/'  
 n= .035  
 LENGTH= 650 FT  
 SLOPE= .005 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= .74 FT  
 PEAK VELOCITY= 1.9 FPS  
 TRAVEL TIME = 5.8 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH 103

## STREAM TO POND

Qin = 36.98 CFS @ 13.13 HRS, VOLUME= 7.26 AF  
 Qout= 36.84 CFS @ 13.23 HRS, VOLUME= 7.23 AF, ATTEN= 0%, LAG= 5.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	2' x 3' CHANNEL SIDE SLOPE= .2 '/' n= .035 LENGTH= 500 FT SLOPE= .005 FT/FT	STOR-IND+TRANS METHOD PEAK DEPTH= 1.46 FT PEAK VELOCITY= 2.7 FPS TRAVEL TIME = 3.1 MIN SPAN= 10-20 HRS, dt=.1 HRS
0.00	0.00	0.00		
.30	1.05	1.10		
.60	3.00	4.64		
.90	5.85	11.41		
1.29	10.90	26.27		
1.80	19.80	58.35		
2.40	33.60	118.24		
3.00	51.00	206.36		

## REACH 104

## STREAM TO POND

Qin = 14.03 CFS @ 12.16 HRS, VOLUME= 1.25 AF  
 Qout= 12.94 CFS @ 12.34 HRS, VOLUME= 1.25 AF, ATTEN= 8%, LAG= 10.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	5' x 4' CHANNEL SIDE SLOPE= .2 '/' n= .035 LENGTH= 700 FT SLOPE= .005 FT/FT	STOR-IND+TRANS METHOD PEAK DEPTH= .73 FT PEAK VELOCITY= 2.0 FPS TRAVEL TIME = 5.9 MIN SPAN= 10-20 HRS, dt=.1 HRS
0.00	0.0	0.00		
.40	2.8	3.84		
.80	7.2	14.46		
1.20	13.2	33.17		
1.72	23.4	71.98		
2.40	40.8	152.14		
3.20	67.2	296.94		
4.00	100.0	505.33		

## REACH 105

## STREAM TO POND

Qin = 26.83 CFS @ 12.67 HRS, VOLUME= 6.02 AF  
 Qout= 26.65 CFS @ 12.78 HRS, VOLUME= 5.98 AF, ATTEN= 1%, LAG= 6.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	5' x 4' CHANNEL SIDE SLOPE= .2 '/' n= .035 LENGTH= 500 FT SLOPE= .005 FT/FT	STOR-IND+TRANS METHOD PEAK DEPTH= 1.06 FT PEAK VELOCITY= 2.4 FPS TRAVEL TIME = 3.5 MIN SPAN= 10-20 HRS, dt=.1 HRS
0.00	0.0	0.00		
.40	2.8	3.84		
.80	7.2	14.46		
1.20	13.2	33.17		
1.72	23.4	71.98		
2.40	40.8	152.14		
3.20	67.2	296.94		
4.00	100.0	505.33		

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## REACH 106

## STORM DRAIN

Q<sub>in</sub> = 26.30 CFS @ 12.32 HRS, VOLUME= 3.59 AF  
 Q<sub>out</sub> = 25.87 CFS @ 12.37 HRS, VOLUME= 3.58 AF, ATTEN= 2%, LAG= 3.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	30" PIPE	STOR-IND+TRANS METHOD
0.00	0.00	0.00	n= .013	PEAK DEPTH= 1.87 FT
.25	.26	.61	LENGTH= 600 FT	PEAK VELOCITY= 6.7 FPS
.50	.70	2.54	SLOPE= .005 FT/FT	TRAVEL TIME = 1.5 MIN
.75	1.24	5.68		SPAN= 10-20 HRS, dt=.1 HRS
1.75	3.67	24.28		
2.00	4.21	28.35		
2.25	4.65	30.91		
2.35	4.79	31.20		
2.43	4.87	30.91		
2.50	4.91	29.00		

## REACH 107

Q<sub>in</sub> = 7.38 CFS @ 13.41 HRS, VOLUME= 1.96 AF  
 Q<sub>out</sub> = 7.35 CFS @ 13.55 HRS, VOLUME= 1.95 AF, ATTEN= 0%, LAG= 8.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	2' x 2' CHANNEL	STOR-IND+TRANS METHOD
0.00	0.0	0.00	SIDE SLOPE= .02 '/'	PEAK DEPTH= .22 FT
.20	2.4	5.20	n= .035	PEAK VELOCITY= 2.5 FPS
.40	8.8	29.47	LENGTH= 700 FT	TRAVEL TIME = 4.7 MIN
.60	19.2	83.42	SLOPE= .05 FT/FT	SPAN= 10-20 HRS, dt=.1 HRS
.86	38.7	212.44		
1.20	74.4	507.88		
1.60	131.2	1082.08		
2.00	204.0	1949.22		

## REACH 109

## STREAM

Q<sub>in</sub> = 43.43 CFS @ 14.14 HRS, VOLUME= 19.45 AF  
 Q<sub>out</sub> = 43.40 CFS @ 14.20 HRS, VOLUME= 19.35 AF, ATTEN= 0%, LAG= 3.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)	10' x 4' CHANNEL	STOR-IND+TRANS METHOD
0.00	0.0	0.00	SIDE SLOPE= .2 '/'	PEAK DEPTH= 1.07 FT
.40	4.8	7.03	n= .035	PEAK VELOCITY= 2.6 FPS
.80	11.2	24.36	LENGTH= 300 FT	TRAVEL TIME = 1.9 MIN
1.20	19.2	52.27	SLOPE= .005 FT/FT	SPAN= 10-20 HRS, dt=.1 HRS
1.72	32.0	106.13		
2.40	52.8	210.61		
3.20	83.2	390.07		
4.00	120.0	639.06		



TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND 1

## EXISTING DETENTION ON ALLEN

Qin = 28.68 CFS @ 12.78 HRS, VOLUME= 4.76 AF

Qout= 27.06 CFS @ 12.94 HRS, VOLUME= 4.72 AF, ATTEN= 6%, LAG= 9.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	2500	0	0	PEAK STORAGE = 11029 CF
112.0	4500	7000	7000	PEAK ELEVATION= 112.6 FT
114.0	10000	14500	21500	FLOOD ELEVATION= 118.0 FT
116.0	20000	30000	51500	START ELEVATION= 110.0 FT
118.0	25000	45000	96500	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 8.7 MIN (4.67 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.023 L=120' S=.025'/1' Ke=.5 Cc=.9 Cd=.6
2	P	116.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

## POND 2

## WYOMING DETENTION

Qin = 28.06 CFS @ 12.94 HRS, VOLUME= 5.13 AF

Qout= 27.48 CFS @ 13.05 HRS, VOLUME= 5.10 AF, ATTEN= 2%, LAG= 7.1 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
90.0	1200	0	0	PEAK STORAGE = 8326 CF
92.0	4000	5200	5200	PEAK ELEVATION= 92.6 FT
94.0	6500	10500	15700	FLOOD ELEVATION= 98.0 FT
96.0	9600	16100	31800	START ELEVATION= 90.0 FT
98.0	15000	24600	56400	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 6.2 MIN (5.05 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	90.0'	30" CULVERT n=.01 L=75' S=.03'/1' Ke=.5 Cc=.9 Cd=.6
2	P	97.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

**POND 3 CULVERT AT VIRGINIA**

Q<sub>in</sub> = 39.72 CFS @ 12.86 HRS, VOLUME= 7.30 AF  
 Q<sub>out</sub> = 36.98 CFS @ 13.13 HRS, VOLUME= 7.26 AF, ATTEN= 7%, LAG= 16.2 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
88.0	50	0	0	PEAK STORAGE = 22625 CF
90.0	5000	5050	5050	PEAK ELEVATION= 92.8 FT
94.0	7500	25000	30050	FLOOD ELEVATION= 96.0 FT
96.0	8500	16000	46050	START ELEVATION= 88.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 8.6 MIN (7.19 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	88.0'	30" CULVERT n=.023 L=65' S=.01'/' Ke=.5 Cc=.9 Cd=.6 TW=2'
2	P	93.4'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

**POND 4 CULVERT AT LEDGEWOOD**

Q<sub>in</sub> = 10.00 CFS @ 12.89 HRS, VOLUME= 1.84 AF  
 Q<sub>out</sub> = 6.32 CFS @ 13.48 HRS, VOLUME= 1.66 AF, ATTEN= 37%, LAG= 35.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	12000	0	0	PEAK STORAGE = 21518 CF
112.0	20000	32000	32000	PEAK ELEVATION= 111.3 FT
114.0	24000	44000	76000	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 72.8 MIN (1.66 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	24" CULVERT n=.023 L=55' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	25' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 0, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND 9

## CULVERT AND CB AT ALLEN

Qin = 30.00 CFS @ 12.39 HRS, VOLUME= 4.14 AF

Qout= 25.45 CFS @ 12.62 HRS, VOLUME= 4.07 AF, ATTEN= 15%, LAG= 13.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	4000	0	0	PEAK STORAGE = 19178 CF
112.0	8000	12000	12000	PEAK ELEVATION= 112.5 FT
114.0	20000	28000	40000	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 16.1 MIN (4.07 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.01 L=45' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.48, 1.45, 1.44, 1.44, 0, 0, 0, 0

## POND 10

## POND ON SITE

Qin = 130.9 CFS @ 12.54 HRS, VOLUME= 24.82 AF

Qout= 43.02 CFS @ 14.15 HRS, VOLUME= 19.04 AF, ATTEN= 67%, LAG= 96.4 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)	STOR-IND METHOD
100.0	5.70	0.00	0.00	PEAK STORAGE = 11.43 AF
102.0	6.80	12.50	12.50	PEAK ELEVATION= 101.8 FT
104.0	7.00	13.80	26.30	FLOOD ELEVATION= 104.0 FT
				START ELEVATION= 100.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 160.8 MIN (19.04 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	100.0'	6' x 4' CULVERT n=.013 L=65' S=.005'/' Ke=.5 Cc=.9 Cd=.6

POND 12 DETENTION ABOVE RAY

Qin = 11.13 CFS @ 12.41 HRS, VOLUME= 1.33 AF  
 Qout= 9.57 CFS @ 12.57 HRS, VOLUME= 1.31 AF, ATTEN= 14%, LAG= 9.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
108.0	1000	0	0	PEAK STORAGE = 6590 CF
110.0	5500	6500	6500	PEAK ELEVATION= 110.0 FT
112.0	9500	15000	21500	FLOOD ELEVATION= 114.0 FT
114.0	15000	24500	46000	START ELEVATION= 108.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 17.2 MIN (1.31 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	108.0'	18" CULVERT n=.01 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.5'	35' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H^1.5 C=1.48, 1.45, 1.44, 0, 0, 0, 0

POND 41 CULVERT AT LEDGWOOD

Qin = .90 CFS @ 13.04 HRS, VOLUME= .18 AF  
 Qout= .90 CFS @ 13.08 HRS, VOLUME= .18 AF, ATTEN= 0%, LAG= 2.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	100	0	0	PEAK STORAGE = 231 CF
113.0	1000	1650	1650	PEAK ELEVATION= 110.4 FT
114.0	1500	1250	2900	FLOOD ELEVATION= 114.0 FT
				START ELEVATION= 110.0 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 6.7 MIN (.18 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	18" CULVERT n=.01 L=45' S=.02'/' Ke=.5 Cc=.9 Cd=.6
2	P	113.0'	50' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H^1.5 C=1.48, 1.45, 1.44, 0, 0, 0, 0

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	12.94	12.39	1.53
2	26.50	40.9	50%75 17%83 33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75 50%83	79	-	44.41	12.23	4.28
5	36.70	34.4	50%87 25%75 25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85 33%83 33%75	81	-	60.41	12.76	9.91
20	4.60	23.1	50%83 50%75	79	-	8.59	12.28	.89
21	1.40	9.8	50%87 50%83	85	-	4.25	12.10	.33
22	8.60	47.1	100%78	78	-	11.15	12.61	1.61
23	11.00	32.3	100%85	85	-	21.57	12.40	2.57
24	8.60	30.0	100%85	85	-	17.39	12.36	2.01
25	10.30	14.4	100%85	85	-	27.14	12.15	2.40
26	43.50	43.0	100%85	85	-	74.27	12.53	10.15
36	3.40	13.4	100%85	85	-	9.38	12.14	.79
40	31.00	63.3	100%72	72	-	26.66	12.84	4.59
41	3.10	74.0	50%77 50%66	72	-	2.41	12.98	.46
42	2.00	43.6	100%72	72	-	2.13	12.58	.30

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	4.6	.4	44.68
101	-	3.0	5.0	.30	.30	.035	300	.0150	4.7	1.1	51.09
102	-	3.0	3.0	.20	.20	.035	650	.0050	2.1	5.3	14.21
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.1	2.7	65.10
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.3	1.5	105.2

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	115.9	1.13	60.41	44.69			26	23.4
2	90.0	98.0	94.8	.52	46.27	44.76			3	16.7
3	88.0	96.0	93.7	.65	65.31	66.22			0	0.0
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	103.5	22.61	243.5	104.6			57	107.0
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
41	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 6.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	25.38	12.37	2.93
2	26.50	40.9	50%75 17%83 33%61	72	-	53.86	12.52	7.22
3	22.00	19.4	50%75 50%83	79	-	74.95	12.22	7.17
5	36.70	34.4	50%87 25%75 25%83	83	-	106.6	12.42	13.03
10	48.00	59.4	33%85 33%83 33%75	81	-	100.1	12.74	16.36
20	4.60	23.1	50%83 50%75	79	-	14.49	12.27	1.50
21	1.40	9.8	50%87 50%83	85	-	6.69	12.10	.51
22	8.60	47.1	100%78	78	-	19.06	12.59	2.74
23	11.00	32.3	100%85	85	-	34.13	12.39	4.06
24	8.60	30.0	100%85	85	-	27.52	12.36	3.17
25	10.30	14.4	100%85	85	-	43.63	12.15	3.78
26	43.50	43.0	100%85	85	-	117.6	12.53	16.08
36	3.40	13.4	100%85	85	-	14.84	12.13	1.25
40	31.00	63.3	100%72	72	-	49.38	12.81	8.40
41	3.10	74.0	50%77 50%66	72	-	4.47	12.95	.84
42	2.00	43.6	100%72	72	-	3.93	12.56	.54



REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30 .30	.035	100	.0150	5.6	.3	95.56
101	-	3.0	5.0	.30 .30	.035	300	.0150	5.8	.9	112.5
102	-	3.0	3.0	.20 .20	.035	650	.0050	2.2	4.9	18.18
103	-	2.0	3.0	.20 .20	.035	500	.0050	3.6	2.3	126.7
104	-	5.0	4.0	.20 .20	.035	700	.0050	2.7	4.3	40.21
105	-	5.0	4.0	.20 .20	.035	500	.0050	3.3	2.5	87.32
106	30.0	-	-	- -	.013	600	.0050	6.6	1.5	29.00
107	-	2.0	2.0	.02 .02	.035	700	.0500	3.9	3.0	51.65
109	-	10.0	4.0	.20 .20	.035	300	.0050	3.8	1.3	176.0

TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

7 Jul 99

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.9	1.67	100.1	96.25			4	8.3
2	90.0	98.0	97.8	1.24	99.42	97.65			2	6.9
3	88.0	96.0	94.1	.72	130.7	131.2			0	.7
4	110.0	114.0	114.0	1.75	49.38	45.82			7	13.0
9	110.0	114.0	113.8	.84	54.38	56.24			0	3.9
10	100.0	104.0	105.0	33.48	410.4	174.8			57	84.2
12	108.0	114.0	113.3	.87	34.13	18.23			47	24.2
41	110.0	114.0	111.0	.01	4.47	4.46			0	1.4

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	4.60	23.1	50%83 50%75	79	-	10.92	12.28	1.13
21	1.40	9.8	50%87 50%83	85	-	5.22	12.10	.40
22	8.60	47.1	100%78	78	-	14.27	12.60	2.05
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.60	30.0	100%85	85	-	21.43	12.36	2.47
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%85	85	-	91.58	12.53	12.51
36	3.40	13.4	100%85	85	-	11.56	12.13	.97
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

7 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	5.1	.3	67.47
101	-	3.0	5.0	.30	.30	.035	300	.0150	5.0	1.0	63.10
102	-	3.0	3.0	.20	.20	.035	650	.0050	2.1	5.1	16.02
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.2	2.6	78.22
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.6	1.4	132.2

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

7 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.5	1.45	76.17	67.42			11	15.1
2	90.0	98.0	96.9	.99	69.84	56.19			20	17.1
3	88.0	96.0	93.8	.66	78.45	78.70			0	0.0
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	104.1	26.81	312.9	131.4			58	100.5
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
41	110.0	114.0	110.8	.01	3.21	3.21			0	1.4

# Appendix D: BROAD CRESTED WEIR COEFFICIENTS

The Pines  
 Pontano  
 7/6/99 TSG

Note: This table contains *metric* discharge coefficients. To obtain English coefficients multiply the values in this table by 1.81, or use a multiplier of 1.81 in the HydroCAD weir description.

Discharge Coefficients for Broad-Crested Weirs\*

Cross section	Upstream head $H$ [m]							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
1	1.61	1.56	1.58					
2	1.60	1.50	1.50					
3	1.58	1.75	1.79					
4	1.53	1.64	1.77					
5	1.54	1.62	1.69					
6	1.72	1.88	1.98					
7	1.65	1.88	2.00					
8	1.53	1.80	1.93					
9				1.96	1.96	1.97	1.99	2.02
10				1.94	1.92	1.89	1.92	1.97
11		2.17	2.10	2.08	2.08	2.06	2.04	2.00
12		1.88	1.96	2.01	2.04	2.05	2.05	2.05
13				1.86	1.96	1.96	1.96	1.96
14				1.86	1.86	1.86	1.86	1.86
15	1.81	2.00						
16	2.10	2.35						
17	1.57	1.73	1.80	1.82	1.83	1.83		
18	1.44	1.46	1.53	1.56	1.69	1.76	1.84	
19	1.43	1.47	1.45	1.46	1.47	1.46	1.48	1.59
20	1.49	1.45	1.44	1.44				
21	1.56	1.60	1.65	1.70	1.74	1.84	1.92	
22	1.56	1.56	1.55	1.55	1.55	1.55	1.54	
23	2.19	2.19	2.19					
24	1.93	1.94	1.94					
25	1.98	1.98	1.97					

\* All dimensions are in meters. Tabulated values represent metric weir coefficients.

Table 9-1 Cont'd

Cross section	Upstream head $H$ [m]									
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50		
26	1.68	1.72	1.72							
27	2.20	2.25	2.06							
28	2.08	2.12	2.12							
29	1.82	1.93	1.92							
30	2.10	2.13	2.13							
31	2.02	2.03	2.01							
32	2.03	2.03	2.01							
33	1.65	1.94	2.10							
34	1.72	1.76	1.76	1.76	1.76	1.76	1.76	1.76		
35				1.87	1.84	1.81	1.82	1.87	1.85	
36		1.91	1.90	1.87	1.84	1.83	1.86	1.90		
37						1.89	1.87	1.87	1.88	
38				1.81	1.81	1.82	1.86	1.90	1.97	2.01
39				1.82	1.83	1.85	1.87	1.88	1.95	2.04
40		1.86	1.90	1.92	1.96	1.97	2.03	2.11		
41		1.72	1.90	2.00	2.06	2.10	2.13			
42		1.78	1.84	1.89	1.93	1.91	2.00			
43		1.75	1.81	1.85	1.88	1.90	1.92	1.95		
44		1.80	1.87	1.85	1.94	1.85	1.87			
45		1.94	1.94	1.95	1.92	1.85	1.81	1.79		
46		1.72	1.72	1.70	1.72	1.76	1.79	1.85		
47		1.70	1.71	1.82						
48				2.09						

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Appendix C: MANNING'S NUMBER TABLES (continued)

THE P.M.E.S.  
 PORTLAND  
 TSC 7/6/99  
 COEFFICIENT n (continued)

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.021	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dringline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush, on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and sloughs	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages	0.030	0.040	0.050
1. Bottom: gravels, cobbles, and few boulders			
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage > 100 ft). The n value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

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Appendix A: RUNOFF CURVE NUMBERS

THE PINES  
 PORTLAND  
 7/6/99 TSB

Runoff curve numbers for urban areas<sup>1</sup>

Cover description	Average percent impervious area <sup>2</sup>	Curve numbers for hydrologic soil group--			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3</sup> :					
Poor condition (grass cover < 50%) .....		68	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....		98	98	98	98
Paved; open ditches (including right-of-way) .....		83	89	92	93
Gravel (including right-of-way) .....		76	85	89	91
Dirt (including right-of-way) .....		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup> .....		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	<u>61</u>	<u>75</u>	<u>83</u>	<u>87</u>
1/3 acre .....	30	<u>57</u>	<u>72</u>	<u>81</u>	<u>86</u>
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup>The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



THE PINES  
 PORTLAND  
 7/6/99 TSG

B. Stormwater calculation model.

1. One day precipitation values. Values to be used in preparation of the TR-20 or TR-55 study. (Revised April 16, 1992)

S&WCD Number, Field Office and S&WCD Location	Rainfall Frequency 24-hour Duration					
	2 yr	5 yr	10 yr	25 yr	50 yr	100
1. Fort Kent - St. John Valley	2.0	3.0	3.5	4.0	4.4	4.8
2. Presque Isle - Central Aroostook	2.4	3.2	3.6	4.2	4.6	5.0
3. Houlton - Southern Aroostook	2.5	3.3	3.8	4.4	4.8	5.3
4. Sanford - York County	2.5	4.0	4.6	5.4	6.0	6.6
5. Dover-Foxcroft - Piscataquis County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.6	3.4	4.0	4.6	5.0	5.5
6. Belfast - Waldo County	2.5	3.7	4.3	4.9	5.5	6.0
7. Bangor - Penobscot County						
- North of CPR	2.5	3.3	3.8	4.4	4.9	5.4
- South of CPR	2.7	3.5	4.1	4.8	5.3	5.9
8. Skowhegan - Somerset County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.7	3.5	4.1	4.7	5.2	5.7
9. Portland - Cumberland County						
- Northwest of Route 11	3.3	4.3	5.0	5.8	6.4	7.9
- Southeast of Route 11	3.0	4.0	4.7	5.5	6.0	6.7
10. South Paris - Oxford County						
- West of Route 26	3.5	4.5	5.2	6.0	6.5	7.1
- East of Route 26	3.0	4.0	4.6	5.3	5.9	6.4
11. Augusta - Kennebec County	3.0	3.8	4.4	5.1	5.6	6.1
12. Rockland - Knox - Lincoln County	2.9	3.8	4.4	5.1	5.6	6.2
13. Auburn - Androscoggin Valley	3.0	3.9	4.6	5.4	5.9	6.5
14. Farmington - Franklin County	2.9	3.7	4.2	4.9	5.4	5.9
15. Machias - Washington County	2.5	3.4	4.0	4.8	5.3	5.9
16. Ellsworth - Hancock County	2.7	3.6	4.2	4.9	5.4	6.0

THE PINES PORTLAND TSG 7/6/99

SuE2 (Joins sheet 67) SuE2



1 Mile  
5 000 Feet

Scale 1:20 000  
(Joins sheet 75)

0  
1 000  
2 000  
3 000  
4 000  
5 000

5 000 FEET



3:3 000 FEET

(Joins sheet 82)

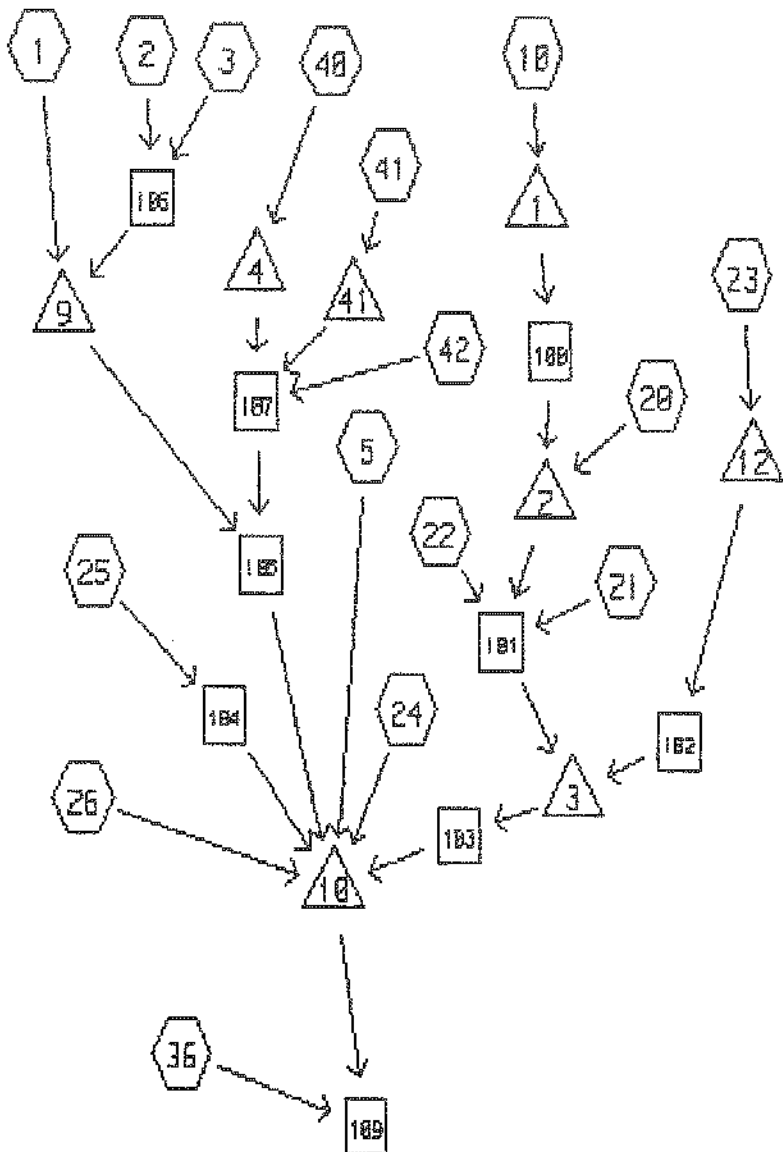
HrB


# THE PINES CN BASED ON SOILS

7/6/99

Area	Recommended Soil Group	Size	CH
1 Summit St to H to Alley Ave	DE $\frac{1}{2}$ W <sup>A</sup> 75 $\frac{1}{2}$ 61	12.1	Uic. 1.65 $\frac{1}{4}$
2 Summit St H.	$\frac{1}{2}$ W <sup>A</sup> $\frac{3}{10}$ DE $\frac{2}{10}$ Au <sup>C</sup> 61 75 83	26.5	
3 NE.	$\frac{1}{10}$ Sp $\frac{2}{10}$ S <sup>A</sup> $\frac{3}{10}$ Au <sup>C</sup> D 87 D C 75	22.0	
4. <del>W of Greenwood</del>	<del>W of Greenwood</del> (81)		
5. South of Greenwood	$\frac{1}{2}$ S <sup>A</sup> $\frac{1}{4}$ De $\frac{1}{4}$ Au <sup>C</sup> 087 B75 C83	36.7	
10 School to Alley Ave	$\frac{1}{3}$ De $\frac{1}{3}$ Au <sup>C</sup> $\frac{1}{3}$ Au/S <sup>A</sup> 75 83 85	48	
20 Corner Virginia, Alley, Ray	$\frac{1}{2}$ Au <sup>C</sup> De $\frac{1}{2}$ 83 75	4.6	
21 S <sup>W</sup> East of Wyoming	$\frac{1}{2}$ S <sup>A</sup> $\frac{1}{2}$ B <sup>0</sup> 87 83	1.4	
22 Pine Grove	$\frac{2}{3}$ H <sup>S</sup> $\frac{1}{3}$ H <sup>R</sup> 85	15.5	
23 Ray + Alley	$\frac{1}{2}$ H <sup>R</sup> $\frac{1}{2}$ S <sup>A</sup> (85)	11.0	
24 S <sup>W</sup> Pine Grove	$\frac{1}{2}$ B <sup>0</sup> $\frac{1}{2}$ H <sup>R</sup> (85)	8.6	
25 Racine St.	$\frac{1}{2}$ De $\frac{1}{2}$ H <sup>R</sup> B75 C10 85	10.3	
26 The Site	$\frac{2}{3}$ S <sup>A</sup> $\frac{1}{6}$ Sp $\frac{1}{6}$ H <sup>R</sup> C10 D (85)	43.5	
26 Below Penn	$\frac{2}{3}$ H <sup>R</sup> $\frac{1}{3}$ S <sup>A</sup> (85)	3.4	

WATERSHED ROUTING =====



 SUBCATCHMENT

 REACH

 POND

 LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

SUBCATCHMENT 2	= SUMMIT NORTH	->	REACH 106
SUBCATCHMENT 3	= NORTH WEST	->	REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	->	POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	->	POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	->	POND 2
SUBCATCHMENT 21	= EAST OF WYOMING	->	REACH 101
SUBCATCHMENT 22	= PINE GROVE	->	REACH 101
SUBCATCHMENT 23	= RAY ALLEN	->	POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	->	POND 10
SUBCATCHMENT 25	= RACINE ST	->	REACH 104
SUBCATCHMENT 26	= THE SITE	->	POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	->	REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	->	POND 4
SUBCATCHMENT 41	= NORTH OF LEDGWOOD	->	POND 41
SUBCATCHMENT 42	= NORTHEAST OF LEDGEWOOD	->	REACH 107
REACH 100	= STREAM	->	POND 2
REACH 101	= STREAM	->	POND 3
REACH 102	= STREAM RAY TO VIRGINIA	->	POND 3
REACH 103	= STREAM TO POND	->	POND 10
REACH 104	= STREAM TO POND	->	POND 10
REACH 105	= STREAM TO POND	->	POND 10
REACH 106	= STORM DRAIN	->	POND 9
REACH 107	=	->	REACH 105
REACH 109	= STREAM	->	
POND 1	= EXISTING DETENTION ON ALLEN	->	REACH 100
POND 2	= WYOMING DETENTION	->	REACH 101
POND 3	= CULVERT AT VIRGINIA	->	REACH 103
POND 4	= CULVERT AT LEDGEWOOD	->	REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

22 Jul 99

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POND 9	= CULVERT AND CB AT ALLEN	-> REACH 105
POND 10	= POND ON SITE	-> REACH 109
POND 12	= DETENTION ABOVE RAY	-> REACH 102
POND 41	= CULVERT AT LEDGWOOD	-> REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	4.22	12.44	.56
2	26.50	40.9	50%75 17%83 33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75 50%83	79	-	20.23	12.24	2.00
5	36.70	34.4	50%87 25%75 25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85 33%83 33%75	81	-	28.68	12.78	4.76
20	5.16	27.2	50%83 50%75	79	-	4.10	12.35	.47
21	1.44	19.1	50%87 50%83	85	-	1.82	12.22	.18
22	10.62	32.8	81%78 19%83	79	-	7.80	12.43	.96
23	11.00	32.3	100%85	85	-	11.13	12.41	1.33
24	8.97	29.3	77%85 23%75	83	-	8.58	12.37	.99
25	10.30	14.4	100%85	85	-	14.03	12.16	1.25
26	43.50	43.0	100%85	85	-	38.26	12.55	5.26
36	3.40	13.4	100%85	85	-	4.84	12.14	.41
40	31.00	63.3	100%72	72	-	10.00	12.89	1.84
41	3.10	74.0	50%77 50%66	72	-	.90	13.04	.18
42	2.00	43.6	100%72	72	-	.80	12.62	.12

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	4.0	.4	27.04
101	-	3.0	5.0	.30	.30	.035	300	.0150	4.2	1.2	31.31
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.1	2.9	9.47
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.7	3.1	37.40
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	300	.0050	2.6	1.9	43.91



TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----			---Qout---		
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	112.6	.25	28.68	27.06			6	9.3
2	90.0	98.0	92.6	.20	28.40	27.81			2	7.4
3	88.0	96.0	92.9	.53	40.28	37.51			7	18.0
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.8	11.53	134.1	43.53			68	95.4
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
41	110.0	114.0	110.4	.01	.90	.90			0	2.3

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	12.94	12.39	1.53
2	26.50	40.9	50%75 17%83 33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75 50%83	79	-	44.41	12.23	4.28
5	36.70	34.4	50%87 25%75 25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85 33%83 33%75	81	-	60.41	12.76	9.91
20	5.16	27.2	50%83 50%75	79	-	9.06	12.33	1.00
21	1.44	19.1	50%87 50%83	85	-	3.53	12.22	.34
22	10.62	32.8	81%78 19%83	79	-	17.11	12.41	2.06
23	11.00	32.3	100%85	85	-	21.57	12.40	2.57
24	8.97	29.3	77%85 23%75	83	-	17.28	12.36	1.98
25	10.30	14.4	100%85	85	-	27.14	12.15	2.40
26	43.50	43.0	100%85	85	-	74.27	12.53	10.15
36	3.40	13.4	100%85	85	-	9.38	12.14	.79
40	31.00	63.3	100%72	72	-	26.66	12.84	4.59
41	3.10	74.0	50%77 50%66	72	-	2.41	12.98	.46
42	2.00	43.6	100%72	72	-	2.13	12.58	.30

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30 .30		.035	100	.0150	4.6	.4	44.68
101	-	3.0	5.0	.30 .30		.035	300	.0150	4.8	1.1	53.66
102	-	3.0	3.0	.20 .20		.035	550	.0200	3.5	2.7	14.24
103	-	2.0	3.0	.20 .20		.035	500	.0050	3.1	2.7	67.20
104	-	5.0	4.0	.20 .20		.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20 .20		.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	- -		.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02 .02		.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20 .20		.035	300	.0050	3.3	1.5	106.3

TYPE III 24-HOUR RAINFALL= 4.70 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	115.9	1.13	60.41	44.69			26	23.4
2	90.0	98.0	94.9	.53	46.74	45.25			3	17.0
3	88.0	96.0	93.8	.65	67.50	71.15			0	0.0
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	103.5	22.78	261.2	105.6			60	105.1
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
41	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	5.16	27.2	50%83 50%75	79	-	11.52	12.33	1.27
21	1.44	19.1	50%87 50%83	85	-	4.35	12.22	.41
22	10.62	32.8	81%78 19%83	79	-	21.76	12.41	2.62
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.97	29.3	77%85 23%75	83	-	21.51	12.35	2.46
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%85	85	-	91.58	12.53	12.51
36	3.40	13.4	100%85	85	-	11.56	12.13	.97
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	5.1	.3	67.47
101	-	3.0	5.0	.30	.30	.035	300	.0150	5.0	1.0	62.63
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.6	2.6	16.04
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.2	2.6	77.28
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.6	1.4	133.5

TYPE III 24-HOUR RAINFALL= 5.50 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- Q <sub>in</sub> (CFS)	----- Q <sub>out</sub> (CFS)	----- PEAK FLOW Q <sub>pri</sub> (CFS)	----- Q <sub>sec</sub> (CFS)	---Q <sub>out</sub> --- ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.5	1.45	76.17	67.42			11	15.1
2	90.0	98.0	97.0	1.02	70.57	56.96			19	17.3
3	88.0	96.0	93.8	.67	77.68	80.71			0	1.2
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	104.1	27.02	329.2	132.7			60	101.5
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
41	110.0	114.0	110.8	.01	3.21	3.21			0	1.4

TYPE III 24-HOUR RAINFALL= 6.70 IN

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RUNOFF BY SCS TR-20 METHOD; TYPE III 24-HOUR RAINFALL= 6.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	25.38	12.37	2.93
2	26.50	40.9	50%75 17%83 33%61	72	-	53.86	12.52	7.22
3	22.00	19.4	50%75 50%83	79	-	74.95	12.22	7.17
5	36.70	34.4	50%87 25%75 25%83	83	-	106.6	12.42	13.03
10	48.00	59.4	33%85 33%83 33%75	81	-	100.1	12.74	16.36
20	5.16	27.2	50%83 50%75	79	-	15.29	12.33	1.68
21	1.44	19.1	50%87 50%83	85	-	5.59	12.21	.53
22	10.62	32.8	81%78 19%83	79	-	28.88	12.40	3.46
23	11.00	32.3	100%85	85	-	34.13	12.39	4.06
24	8.97	29.3	77%85 23%75	83	-	28.05	12.35	3.18
25	10.30	14.4	100%85	85	-	43.63	12.15	3.78
26	43.50	43.0	100%85	85	-	117.6	12.53	16.08
36	3.40	13.4	100%85	85	-	14.84	12.13	1.25
40	31.00	63.3	100%72	72	-	49.38	12.81	8.40
41	3.10	74.0	50%77 50%66	72	-	4.47	12.95	.84
42	2.00	43.6	100%72	72	-	3.93	12.56	.54



TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
100	-	3.0	5.0	.30	.30	.035	100	.0150	5.6	.3	95.56
101	-	3.0	5.0	.30	.30	.035	300	.0150	5.8	.9	112.3
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.7	2.5	18.19
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.6	2.3	126.6
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.7	4.3	40.21
105	-	5.0	4.0	.20	.20	.035	500	.0050	3.3	2.5	87.32
106	30.0	-	-	-	-	.013	600	.0050	6.6	1.5	29.00
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.9	3.0	51.65
109	-	10.0	4.0	.20	.20	.035	300	.0050	3.8	1.3	178.3

TYPE III 24-HOUR RAINFALL= 6.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

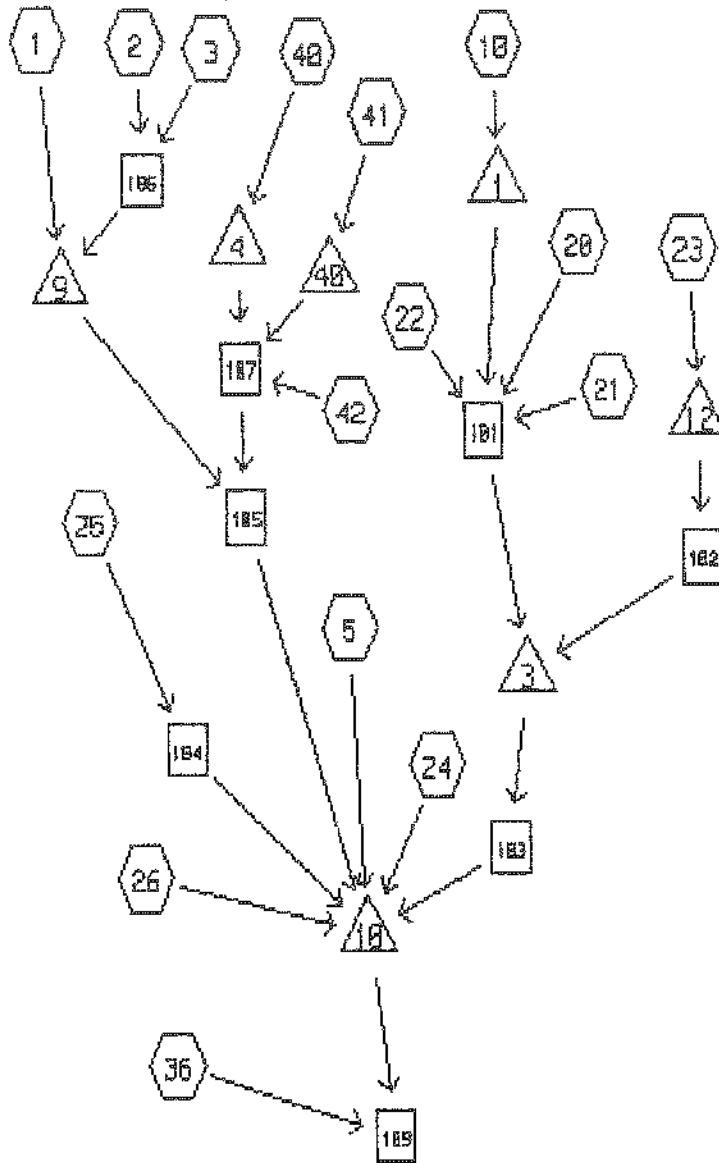
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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.9	1.67	100.1	96.25			4	8.3
2	90.0	98.0	97.8	1.24	100.8	99.15			2	6.0
3	88.0	96.0	94.1	.72	130.3	130.7			0	.8
4	110.0	114.0	114.0	1.75	49.38	45.82			7	13.0
9	110.0	114.0	113.8	.84	54.38	56.24			0	3.9
10	100.0	104.0	105.1	33.83	425.4	177.2			58	82.8
12	108.0	114.0	113.3	.87	34.13	18.23			47	24.2
41	110.0	114.0	111.0	.01	4.47	4.46			0	1.4

WATERSHED ROUTING =====



SUBCATCHMENT



REACH



POND



LINK

SUBCATCHMENT 1

= SUMMIT TO ALLEN NORTH

-> POND 9

TYPE III 24-HOUR RAINFALL= 3.00 IN

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SUBCATCHMENT 2	= SUMMIT NORTH	-> REACH 106
SUBCATCHMENT 3	= NORTH WEST	-> REACH 106
SUBCATCHMENT 5	= SOUTH OF LEDGEWOOD	-> POND 10
SUBCATCHMENT 10	= SCHOOL TO ALLEN	-> POND 1
SUBCATCHMENT 20	= CORNER RAY ALLEN VIRGINIA	-> REACH 101
SUBCATCHMENT 21	= EAST OF WYOMING	-> REACH 101
SUBCATCHMENT 22	= PINE GROVE	-> REACH 101
SUBCATCHMENT 23	= RAY ALLEN	-> POND 12
SUBCATCHMENT 24	= EAST OF PINE GROVE	-> POND 10
SUBCATCHMENT 25	= RACINE ST	-> REACH 104
SUBCATCHMENT 26	= THE SITE	-> POND 10
SUBCATCHMENT 36	= AREA BELOW PENN AVE	-> REACH 109
SUBCATCHMENT 40	= NORTH OF LEDGEWOOD	-> POND 4
SUBCATCHMENT 41	= NORTH OF LEDGEWOOD	-> POND 40
SUBCATCHMENT 42	= NORTEAST OF LEDGEWOOD	-> REACH 107
REACH 101	= STREAM	-> POND 3
REACH 102	= STREAM RAY TO VIRGINIA	-> POND 3
REACH 103	= STREAM TO POND	-> POND 10
REACH 104	= STREAM TO POND	-> POND 10
REACH 105	= STREAM TO POND	-> POND 10
REACH 106	= STORM DRAIN	-> POND 9
REACH 107	=	-> REACH 105
REACH 109	= STREAM	->
POND 1	= CULVERT AND CB AT ALLEN	-> REACH 101
POND 3	= CULVERT AT VIRGINIA	-> REACH 103
POND 4	= CULVERT AT LEDGEWOOD	-> REACH 107
POND 9	= EXISTING CULVERT AND CB ON ALLEN	-> REACH 105
POND 10	= POND ON SITE	-> REACH 109

Data for THE PINES PORTLAND 98113 TSG 5/7/99 EXISTING  
TYPE III 24-HOUR RAINFALL= 3.00 IN

Page 18

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POND 12 = DETENTION ABOVE RAY -> REACH 102

POND 40 = CULVERT AT LEDGEWOOD -> REACH 107

TYPE III 24-HOUR RAINFALL= 3.00 IN

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22 Jul 99

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 3.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	4.22	12.44	.56
2	26.50	40.9	50%75 17%83 33%61	72	-	11.01	12.58	1.59
3	22.00	19.4	50%75 50%83	79	-	20.23	12.24	2.00
5	36.70	34.4	50%87 25%75 25%83	83	-	32.72	12.44	4.05
10	48.00	59.4	33%85 33%83 33%75	81	-	28.68	12.78	4.76
20	5.16	27.2	50%78 50%71	75	-	3.20	12.37	.37
21	1.44	19.1	50%80 50%74	77	-	1.18	12.24	.12
22	10.62	32.8	81%78 19%83	79	-	7.80	12.43	.96
23	11.00	32.3	100%85	85	-	11.13	12.41	1.33
24	8.97	21.0	77%85 23%75	83	-	9.78	12.25	.99
25	10.30	14.4	100%85	85	-	14.03	12.16	1.25
26	43.50	43.0	100%78	78	-	26.33	12.58	3.70
36	3.40	20.0	100%78	78	-	2.91	12.25	.29
40	31.00	63.3	100%72	72	-	10.00	12.89	1.84
41	3.10	74.0	50%77 50%66	72	-	.90	13.04	.18
42	2.00	43.6	100%72	72	-	.80	12.62	.12

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	4.1	1.6	30.61
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.1	2.9	9.47
103	-	2.0	3.0	.20	.20	.035	500	.0050	2.7	3.1	36.56
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.0	5.9	12.94
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.4	3.5	26.65
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	25.87
107	-	2.0	2.0	.02	.02	.035	700	.0500	2.5	4.7	7.35
109	-	10.0	4.0	.20	.20	.035	700	.0050	2.7	4.3	49.09

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	112.5	.45	28.68	25.69			10	13.3
3	88.0	96.0	92.8	.51	39.50	36.69			7	17.1
4	110.0	114.0	111.3	.49	10.00	6.32			37	35.3
9	110.0	114.0	112.5	.44	30.00	25.45			15	13.6
10	100.0	104.0	101.5	9.49	119.9	48.80			59	85.9
12	108.0	114.0	110.0	.15	11.13	9.57			14	9.8
40	110.0	114.0	110.4	.01	.90	.90			0	2.3



TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--			WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75	50%61		68	-	12.94	12.39	1.53
2	26.50	40.9	50%75	17%83	33%61	72	-	29.17	12.54	3.96
3	22.00	19.4	50%75	50%83		79	-	44.41	12.23	4.28
5	36.70	34.4	50%87	25%75	25%83	83	-	65.95	12.43	8.08
10	48.00	59.4	33%85	33%83	33%75	81	-	60.41	12.76	9.91
20	5.16	27.2	50%78	50%71		75	-	7.80	12.34	.87
21	1.44	19.1	50%80	50%74		77	-	2.72	12.23	.26
22	10.62	32.8	81%78	19%83		79	-	17.11	12.41	2.06
23	11.00	32.3	100%85			85	-	21.57	12.40	2.57
24	8.97	21.0	77%85	23%75		83	-	19.98	12.24	1.98
25	10.30	14.4	100%85			85	-	27.14	12.15	2.40
26	43.50	43.0	100%78			78	-	59.10	12.55	8.15
36	3.40	20.0	100%78			78	-	6.54	12.23	.64
40	31.00	63.3	100%72			72	-	26.66	12.84	4.59
41	3.10	74.0	50%77	50%66		72	-	2.41	12.98	.46
42	2.00	43.6	100%72			72	-	2.13	12.58	.30

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30	.30	.035	400	.0150	5.3	1.3	75.52
102	-	3.0	3.0	.20	.20	.035	550	.0200	3.5	2.7	14.24
103	-	2.0	3.0	.20	.20	.035	500	.0050	3.3	2.5	87.48
104	-	5.0	4.0	.20	.20	.035	700	.0050	2.4	4.9	25.35
105	-	5.0	4.0	.20	.20	.035	500	.0050	2.9	2.9	53.09
106	30.0	-	-	-	-	.013	600	.0050	6.7	1.5	29.58
107	-	2.0	2.0	.02	.02	.035	700	.0500	3.1	3.7	18.77
109	-	10.0	4.0	.20	.20	.035	700	.0050	3.5	3.3	123.6

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.8	.86	60.41	60.51			0	3.2
3	88.0	96.0	93.9	.67	89.75	88.44			1	1.3
4	110.0	114.0	112.9	1.20	26.66	16.04			40	35.8
9	110.0	114.0	113.5	.77	41.95	37.43			11	20.2
10	100.0	104.0	102.8	18.19	245.7	122.9			50	69.8
12	108.0	114.0	111.6	.42	21.57	14.30			34	18.4
40	110.0	114.0	110.7	.01	2.41	2.41			0	1.5

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	12.10	29.1	50%75 50%61	68	-	17.72	12.38	2.07
2	26.50	40.9	50%75 17%83 33%61	72	-	38.77	12.53	5.23
3	22.00	19.4	50%75 50%83	79	-	56.48	12.22	5.42
5	36.70	34.4	50%87 25%75 25%83	83	-	82.12	12.42	10.05
10	48.00	59.4	33%85 33%83 33%75	81	-	76.17	12.75	12.46
20	5.16	27.2	50%78 50%71	75	-	10.17	12.34	1.13
21	1.44	19.1	50%80 50%74	77	-	3.50	12.22	.34
22	10.62	32.8	81%78 19%83	79	-	21.76	12.41	2.62
23	11.00	32.3	100%85	85	-	26.58	12.39	3.16
24	8.97	21.0	77%85 23%75	83	-	24.88	12.24	2.45
25	10.30	14.4	100%85	85	-	33.99	12.15	2.95
26	43.50	43.0	100%78	78	-	75.78	12.54	10.40
36	3.40	20.0	100%78	78	-	8.37	12.23	.81
40	31.00	63.3	100%72	72	-	35.48	12.83	6.07
41	3.10	74.0	50%77 50%66	72	-	3.21	12.97	.60
42	2.00	43.6	100%72	72	-	2.83	12.57	.39

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

22 Jul 99

HydroCAD 5.11 000465 (c) 1986-1999 Applied Microcomputer Systems

## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
101	-	3.0	5.0	.30 .30	.035	400	.0150	5.6	1.2	98.40
102	-	3.0	3.0	.20 .20	.035	550	.0200	3.6	2.6	16.04
103	-	2.0	3.0	.20 .20	.035	500	.0050	3.5	2.4	112.0
104	-	5.0	4.0	.20 .20	.035	700	.0050	2.5	4.7	31.13
105	-	5.0	4.0	.20 .20	.035	500	.0050	3.0	2.8	62.18
106	30.0	-	-	- -	.013	600	.0050	6.7	1.5	29.00
107	-	2.0	2.0	.02 .02	.035	700	.0500	3.3	3.5	28.28
109	-	10.0	4.0	.20 .20	.035	700	.0050	3.7	3.1	160.4

POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	114.0	113.9	.89	76.17	76.07			0	2.3
3	88.0	96.0	94.0	.70	114.3	112.6			2	2.1
4	110.0	114.0	113.7	1.58	35.48	24.93			30	28.4
9	110.0	114.0	113.6	.81	46.73	45.50			3	9.8
10	100.0	104.0	103.4	21.90	314.8	159.6			49	60.8
12	108.0	114.0	112.3	.58	26.58	16.08			40	20.8
40	110.0	114.0	110.8	.01	3.21	3.21			0	1.4



Attorneys At Law

*Joe Gray*

July 2, 1999

VIA TELEFAX  
Penny Littell, Esq.  
Corporation Counsel's Office  
City of Portland  
Portland City Hall  
389 Congress Street  
Portland, Maine 04101-3509

E. Stephen Murray  
Peter S. Plumb  
John C. Lightbody  
Thomas C. Newman  
John C. Bannon  
Susan D. Thomas  
Drew A. Anderson  
Richard L. O'Meara  
Barbara T. Schneider  
Christopher B. Branson  
Charles P. Piccentini, Jr.  
Michael D. Traister  
Rita S. Saliba

RE: Pines of Portland / Development in the Area of Penn and Wyoming Avenues

Dear Penny:

First, this letter will confirm that this project has been placed on the Planning Board's agenda for (1) a workshop on July 13, 1999, and (2) a public hearing on July 27, 1999.

Second, this letter will confirm that, in light of the above, my clients do not intend to raise, at either of the above proceedings, the issue of whether the Planning Board has jurisdiction to review this project as a subdivision. My clients should not be understood as having waived or conceded that issue. However, given the City's willingness to conduct Planning Board review of this project in an expedited manner, my clients are willing to "table" their jurisdictional challenge. Hence, you need not prepare any rebuttal to the arguments we have raised to date.

On behalf of my clients, I thank you and Mr. Gray for working toward an amicable reconciliation of our interests and those of the City.

Sincerely,

*JCB*  
John C. Bannon

Counsel:  
Peter L. Murray  
Charlton S. Smith

75 Pearl Street  
Post Office Box 9785  
Portland, Maine  
04104-5085

Telephone:  
207.773.5651

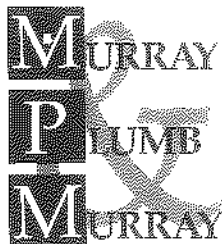
Facsimile:  
207.773.8023

E-Mail:  
info@mpmlaw.com

WWW:  
mpmlaw.com

JCB/kh

cc: Amy Mulkerin  
Greg McCormack



Attorneys At Law

June 23, 1999

Portland Planning Board  
Portland City Hall  
389 Congress Street  
Portland, Maine 04101-3509

RE: The Pines of Portland

Dear Chairman Carroll and Members of the Planning Board:

E. Stephen Murray  
Peter S. Plumb  
John C. Lightbody  
Thomas C. Newman  
John C. Bannon  
Susan D. Thomas  
Drew A. Anderson  
Richard L. O'Meara  
Barbara T. Schneider  
Christopher B. Branson  
Charles P. Piacentini, Jr.  
Michael D. Traister  
Rita S. Saliba

Enclosed with this letter is a copy, for each of you, of a memorandum that I had prepared for yesterday's workshop.

You may recall that, at the workshop, Mr. Gray vehemently denied my statement to the Board that the City had barred my clients and me from speaking with Ms. Schmuckal. I concluded, from Mr. Gray's certainty on the point, that I was somehow mistaken. I therefore refrained from filing the memorandum in the expectation that I would be updating it with information derived from an interview with Ms. Schmuckal.

Counsel:  
Peter L. Murray  
Charlton S. Smith

When I called Ms. Schmuckal this morning, she told me that she was under the impression that she should not speak with me. I told Ms. Schmuckal that I did not wish to get her into any trouble, and that I would appreciate it if she could simply double-check her instructions and call me back. Ms. Schmuckal later left me a voice-mail message that she had been advised by Corporation Counsel's Office not to speak with me about any aspect of the matter.

75 Pearl Street  
Post Office Box 9785  
Portland, Maine  
04104-5085

Although it is not updated as I planned, I hope that you will find my memorandum useful to your deliberations.

Telephone:  
207.773.5651

Because I have not yet received any legal memoranda from the Corporation Counsel's office, I do not know what its position may be. Hence, my memorandum should not be construed as a response to any positions asserted by Corporation Counsel, and I reserve the right to make such a response if I receive such a memorandum in the future.

Facsimile:  
207.773.8023

F-Mail:  
info@mpmlaw.com

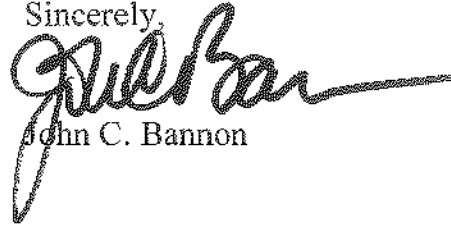
WWW:  
mpmlaw.com



June 23, 1999  
Page 2

Thank you for your patience.

Sincerely,

A handwritten signature in cursive script, appearing to read "John C. Bannon". The signature is written in black ink and is positioned above the printed name.

John C. Bannon

JCB/kh

cc: Amy Mulkerin  
Greg McCormack  
Penny Littell, Esq.

MEMORANDUM

TO: Chairman John Carroll and Members of the Portland Planning Board

FROM: Murray, Plumb & Murray on behalf of Amy K. Mulkerin and Gregory T. McCormack (A & G Associates)

DATE: June 22, 1999

FILE: Pines of Portland

RE: Exemption from Subdivision Review

**I. Introduction**

The City of Portland has very recently taken the position that further development of lots within the 1926 Pines Subdivision requires subdivision approval.

At the Planning Board's workshop on June 8, 1999, A & G Associates brought to the Board's attention the fact that the proposed development of lots within the 1926 Pines Subdivision would cause no lot divisions whatsoever. Rather, A & G would simply combine existing lots into larger, aggregate lots. This is no different than what might be done by a private individual who purchases several small lots in a grandfathered subdivision.

Accordingly, A & G Associates requested the Planning Board to confirm that this project is exempt from subdivision review under Section 14-508 of the Land Use Code. That section provides that:

This article does not apply to subdivisions ... which have been legally recorded in the registry of deeds prior to June 6, 1979.

At the conclusion of the workshop, the Board appeared to reserve judgment on the need for subdivision review until it obtained information concerning the Zoning Administrator's actions with respect to the Pines project.

Because Corporation Counsel has refused us permission to speak with Ms. Schmuckal, we have been unable to interview her about this matter. Despite that impediment, our research has produced ample evidence that Ms. Schmuckal did, indeed,

determine that the Pines project does not require subdivision review. Indeed, that conclusion was shared by the Planning Department itself.

## II. The City's Review of the Pines Project

### A. The Initial Meetings with the Zoning Administrator

Corporation Counsel furnished us with a copy of Marge Schmuckal's memorandum to the Planning Board dated June 16, 1999. Although Ms. Schmuckal admits that she has a faint memory of her meeting with Ms. Mulkerin and Mr. McCormack on January 9, 1998, she does recall the following:

- a. That she discussed with Amy and Greg "broad issues relating to development, including subdivision review...[and] my understanding of the subdivision section of the Land Use Code." (emphasis added). Thus, Ms. Schmuckal evidently believed it was within her jurisdiction to interpret those portions of the Land Use Code relating to subdivisions.
- b. That she discussed with Amy and Greg "the requirements for constructing streets to City Standards."
- c. That Amy and Greg asked Ms. Schmuckal "how many lots could be divided before subdivision review would be required," and that Ms. Schmuckal replied that "the splitting of more than one lot, thereby creating more than one division, would require subdivision review."

Those recollections are consistent with Amy and Greg's memory that they were told that, so long as they did not make any new divisions of the grandfathered lots within the Pines subdivision, they did not need subdivision review to develop combinations of existing lots.

In fact, Amy and Greg had a second meeting with Ms. Schmuckal, on May 22, 1998, to discuss the development of the Pines. Attached to this memorandum as Exhibit A is a map of the Pines Subdivision that A & G Associates faxed to Ms. Schmuckal and Alex Jaegerman before that meeting, along with the fax cover pages.

### B. Building Permits for 6 Lots on Penn Avenue

Between December 30, 1998 and June 7, 1999, the City issued to A & G Associates building permits for the following lots on Penn Avenue:

- a. Lot 92, October 2, 1998
- b. Lot 85, December 30, 1998
- c. Lot 80, February 17, 1999
- d. Lot 86, May 13, 1999
- e. Lot 91, June 4, 1999
- f. Lot 79, June 7, 1999

See Permits, with Planning Department comments, attached to this memorandum as Exhibit B.

Each of the building permits contains a block, entitled "Zoning Approval," in which the relevant officials indicate whether the project requires subdivision approval and/or site plan approval. In each instance, the "Subdivision" box is left unchecked, while the Site Plan box is checked so as to indicate that the project requires minor/minor Site Plan review.

Those building permits were also accompanied by review comments by the Planning Department. None of those comments indicated that the combining of grandfathered lots with the 1926 Pines Subdivision required subdivision approval.

It is worthy of note that, before the City issued the Building Permit for Lot 80, the City staff apparently discussed the permit with Corporation Counsel. Corporation Counsel's only comment, by e-mail dated February 5, 1999, was that the permit should be issued with a condition that there should be no access to the lot via Jersey Avenue. (See Exhibit C attached to this memorandum). Corporation Counsel followed up that e-mail with a letter to the developers dated February 17, 1999, in which she asked for certain information concerning the 6 lots being developed on Penn Avenue. The letter makes no reference to any need for subdivision review. (See Exhibit D attached to this memorandum).

Finally, no one appealed any of the building permits to the Zoning Board of Appeals.

Accordingly, at least until June 7, 1999, the City's Zoning and Planning staffs were taking the position that the combination of lots within the 1926 Pines Subdivision did not require subdivision approval.

### **C. Review of Wyoming Avenue Subdivision**

The Planning Department began its review of A & G's proposed 6-lot development off Wyoming Avenue in April of 1999. The review memorandum from Planner Kandice Talbot dated April 21, 1999 specifically noted that "the applicant does not, however, need Planning Board approval, but only staff review and approval." (See Exhibit E attached to this memorandum).

Once again, until sometime in May of 1999, there was express agreement, at all levels of the City's review staff, that the combination of lots within the 1926 Pines Subdivision did not require subdivision review.

### **III. Applicable Law**

#### **A. The City Was Right The First Time**

As we indicated at the June 8, 1999 workshop, we believe that the City staff were absolutely correct in determining that the mere combination of lots, in a subdivision grandfathered under Section 14-508, does not require subdivision review.

#### **B. It is Too Late for the City to Repudiate Its Earlier Decisions**

However, even if the City now believes those decisions to have been wrong, it is too late for the City to challenge them. The City had the right to appeal from the granting of the building permits for the 6-lot Penn Avenue subdivision, if it felt those permits were erroneous because of the developers' failure to obtain subdivision review. Crosby v. Town of Belgrade, 562 A.2d 1228 (Me. 1989). Because it did not do so, the City is now foreclosed from questioning the validity of those permits and of the Code interpretations that underlay them. Juliano v. Town of Poland, 725 A.2d 545 (1999); Wright v. Town of Kennebunkport, 715 A.2d 162 (Me. 1998).

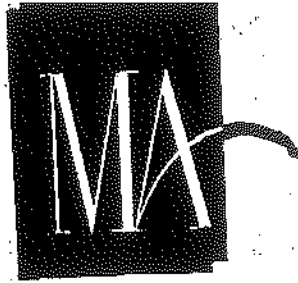
#### **C. The Planning Board Cannot Overrule the Zoning Administrator**

It may be that the City wishes the Planning Board to overrule the Zoning Administrator's (and Planning Staff's) interpretation of the Code provisions governing when a subdivision is "grandfathered" from Planning Board review. However, the Planning Board has no jurisdiction to do so. Only the Board of Appeals has jurisdiction to "hear and decide appeals from and review orders, decisions, determinations, or interpretations of the failure to act of the building authority." Section 14-472(a). In

contrast, the Planning Board has no appellate jurisdiction whatsoever. Sections 14-30, 14-497.

Moreover, the Law Court has ruled, on two occasions, that when an ordinance gives land use interpretation and enforcement power to a particular municipal officer (here, the Zoning Administrator), the Planning Board cannot purport to decide questions that are within the original jurisdiction of that municipal officer. Oeste v. Town of Camden, 534 A.2d 683 (Me. 1987); Ray v. Town of Camden, 533 A.2d 912 (Me. 1987). The Land Use Code nowhere gives the Planning Board authority to interpret the Code; rather, that authority is granted to the Zoning Administrator as an agent for the City "building authority."

Accordingly, the Planning Board lacks the power to decide, in the first instance, whether the projects proposed by A & G Associates require subdivision approval. That power is delegated to the Zoning Administrator; and in this case, she has ruled that the recombination of lots within the 1926 Pines Subdivision, which does not cause any alterations of existing boundaries, does not require Planning Board subdivision review.



MULKERIN ASSOCIATES  
REAL ESTATE



## FAX COVER SHEET

Date: 5/22/98  
Total Pages: 2  
To: Alex Jaegerman  
Company Fax #:  
From: Amy Mulkerin  
Subject:

Dear Alex,

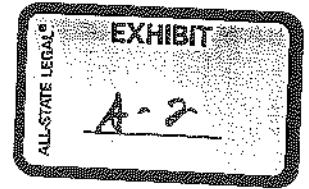
This Plan is for your Review  
for our meeting on Tues. 1:30  
w/ Marge

Amy Mulkerin

CALL US AT 772-2127 IF THERE ARE ANY PROBLEMS WITH THIS FAX.



MULKERIN ASSOCIATES  
REAL ESTATE



## FAX COVER SHEET

Date: 5/22  
Total Pages: 2  
To: Marge Schmuttal  
Company Fax #:  
From: Amy Mulkerin  
Subject:

Dear Marge,

for our meeting Tues at 130

w/ Alex

CALL US AT 772-2127 IF THERE ARE ANY PROBLEMS WITH THIS FAX.

426 Forest Avenue, Portland, ME 04101  
207-772-2127 Fax: 207-871-8695



VERMONT AVENUE

PENN AVENUE (Planned)

MONTANA STREET

JERSEY AVENUE (Planned)

VIRGINIA AVENUE

- LEGEND**
- Area Not Sold
  - \* Area Not Sold
  - o Area Available
  - o Area Available
  - o Area Available
  - o Area Available
  - o Area Available
  - o Area Available



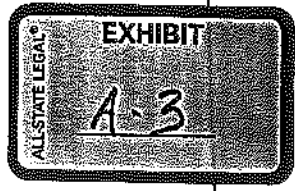
1. ALL RIGHTS RESERVED BY THE SURVEYOR. NO PART OF THIS SURVEY MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR.

Survey By: **ROBERT Z. INC.**  
P.O. Box 280  
Baltimore, MD

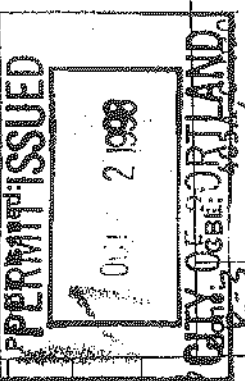
Date Prepared By:  
April 1988

Standard Boundary Survey  
Penn Avenue  
Aerial Photo  
A. B. G. Associates  
488 Penn Avenue  
Northwest, Baltimore, MD

- (1) City of Baltimore
- (2) Board of Public Works
- (3) Board of Public Works
- (4) Board of Public Works
- (5) Board of Public Works
- (6) Board of Public Works
- (7) Board of Public Works
- (8) Board of Public Works
- (9) Board of Public Works
- (10) Board of Public Works



Permit No: **981122**



Location of Construction: <b>90 Penn Ave (Lot #3)</b>	Owner: <b>A &amp; G Associates</b>	Phone: <b>772-2127</b>
Owner Address:	Lessee/Buyer's Name:	Business Name:
Contractor Name: <b>A &amp; G Assoc.</b>	Address: <b>426 Forest Ave Ptld, ME 04101</b>	Phone: <b>772-2127</b>
Past Use: <b>Vacant Land</b>	Proposed Use: <b>1-fam</b>	COST OF WORK: \$ <b>120,000.00</b>
Proposed Project Description: <b>Construct Single Family Dwelling</b>	FIRE DEPT. <input type="checkbox"/> Approved <input type="checkbox"/> Denied	PERMIT FEE: \$ <b>620.00</b>
	INSPECTION: Use Group: <b>A1</b> Type: <b>SP</b>	Signature: <i>[Signature]</i>
	Signature: <b>PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)</b>	Signature: <i>[Signature]</i>
	Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved with Conditions <input type="checkbox"/> Denied	Date: <b>20 Sept 98</b>

- Zoning Approval: *[Signature]* **10/2/98**
- Variance
  - Miscellaneous
  - Conditional Use *T. Camb*
  - Interpretation *give me*
  - Approved *ok on Dis*
  - Denied *Effect - Tabular*
  - Historic Preservation *S*
  - Not in District or Landmark
  - Does Not Require Review
  - Requires Review
- Action: *[Signature]*
- Approved
  - Approved with Conditions
  - Denied
- Date: *[Signature]*

Permit Taken By: **MG** Date Applied For: **20 Sept 98**

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.

2. Building permits do not include plumbing, septic or electrical work.

3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT: \_\_\_\_\_ ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

DATE: **29 Sept 98**

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE: **LOT 3** White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector



CEO DISTRICT

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19980127  
I. D. Number

J. & G Associates  
Applicant  
26 Forest Ave, Portland, ME 04101  
Applicant's Mailing Address  
my Mulkerin  
Consultant/Agent  
72-2127 871-8695  
Applicant or Agent Daytime Telephone, Fax

8/22/98  
Application Date  
92 Penn Ave (Lot #3)  
Project Name/Description

Address of Proposed Site  
408a-C-830+  
Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 92 Penn Avenue  
The number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext.8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable.

A sewer permit is required for your project. Please contact Carol Merritt at 874-8300, ext. 8820, The Wastewater Management Section of Public Works must be notified five (5) working days prior to sewer connection to the street. Hire an inspector for your site.

As-built record information for sewer and stormwater service connections must be submitted to Public Works Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours, drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage improvements as necessary due to field conditions.

Eroded soil shall be contained on-site. Silt fence shall be placed along the down gradient disturbed area. The brook must be protected.

A swale shall be constructed along the westerly property line. It must slope to the rear of property since the proposed grade of the road is higher than the lot.

The approval is based on no daylight basement. An amended plan must be submitted for review if any changes to the site plan are proposed by the applicant.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19980127  
I. D. Number

A & G Associates

Applicant

426 Forest Ave, Portland, ME 04101

Applicant's Mailing Address

Amy Mulkerin

Consultant/Agent

772-2127 871-8696

Applicant or Agent Daytime Telephone, Fax

9/28/98

Application Date

92 Penn Ave (Lot #3)

Project Name/Description

Address of Proposed Site

486a-C-0304

Assessor's Reference: Chart-Block-Lot

1. Separate permits shall be required for future decks, sheds, pools, and/or garage.
2. Prior to any occupancy permit issuance, the road in front of this dwelling shall be up to City Standards.
3. As per our conversation on 10/1/98, the right side stairs shall be relocated to the rear so that the side setback of 14' can be met.  
A new plot plan shall be submitted prior to construction to reflect this change.

Fire Conditions of Approval

Location of Construction: 85 Penn Ave (Lot #5)	Owner: Pines of Portland, Inc.	Phone: 772-2127	Permit No: 981454
Owner Address: 426 Forest Ave 04101	Lessee/Buyer's Name:	Phone:	Business Name:
Contractor Name: SAA	Address:	Phone:	
Past Use: Vacant Land	Proposed Use: 1-fam dwelling	COST OF WORK: \$ 100,000.00	PERMIT FEE: \$ 520.00
		FIRE DEPT. <input type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group 3 Type 5B
Proposed Project Description: Construct Single Family dwelling	Signature:	Signature:	Signature:
	PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)	Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved with Conditions <input type="checkbox"/> Denied	Signature: <i>[Signature]</i>
Permit Taken By: MG	Date Applied For: 30 November 1998	Signature:	Date:

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

**PERMIT ISSUED WITH REQUIREMENTS**

SIGNATURE OF APPLICANT: \_\_\_\_\_ ADDRESS: \_\_\_\_\_ DATE: 01 December 1998

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE: *LOT 5* White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector

Zone: 3 CBL: 405-A-F-01  
 Zoning Approval: *off with conditions*  
 Special Zone or Reviews  
 Shoreland  
 Wetland  
 Flood Zone Map 2 Zone  
 Subdivision  
 Site Plan maj Ordinar: Emr

12/29 Zoning Appeal  
 Variances per WML  
 Miscellaneous  
 Conditional Use  
 Interpretation  
 Approved  
 Denied

Action:  
 Historic Preservation  
 Not in District or Landmark  
 Does Not Require Review  
 Requires Review

ALL-STATE LEGAL® EXHIBIT

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

18980181  
I. D. Number

Pines of Portland

Applicant

426 Forest Ave, Portland, ME 04101

Applicant's Mailing Address

Amy Mulkerin or Greg McCormack

Consultant/Agent

772-2127

Applicant or Agent Daytime Telephone, Fax

11/30/98

Application Date

Penn Ave #85 (Lot 5)

Project Name/Description

85 Penn Ave

Address of Proposed Site

408-A-F-011

Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 85 Penn Avenue (Lot 5)

the number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext. 8722) must be notified five (5) working days

prior to date required for final site inspection. Please make allowances for completion of site plan requirements

determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must

be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of

Occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable.

A permit is required for your project. Please contact Carol Merritt at 874-8300, ext. 8828. The Wastewater

and D. Section of Public Works must be notified five (5) working days prior to sewer connection to

schedule an Inspector for your site.

As-built record information for sewer and stormwater service connections must be submitted to Public Works

Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in

conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide

positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor

elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours,

rainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices

and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage

improvements as necessary due to field conditions.

Eroded soil shall be contained on site. A crushed stone construction entrance shall be

placed at the proposed curb cut. Silt fence shall be placed downgradient of all disturbed

mass.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

This property is at it's maximum lot coverage of 25% under today's zoning ordinance. No future expansion shall be allowed without Board of Appeals ap

! The setbacks are shown to be exactly on the lot lines. Your inspector will want to know exactly where the lines are prior to concrete placement.

LP: construction, Public Works and Tony Lombardo shall approved the drainage situation in the rear as discussed with you previously.

**Fire Conditions of Approval**

Permit No: **990121**

**PERMIT ISSUED**  
Permit Issued:

**FEB 17 1999**

**CITY OF PORTLAND**

Zone: **B-3** CBL: **405A-C-027**  
Zoning Approval: *[Signature]*  
Special Zone or Reviews:  
 Shoreland **NA**  
 Wetland  
 Flood Zone **Zone C**  
 Subdivision  
 Site Plan major Minor **Dist**

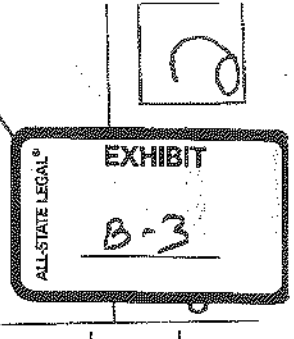
Zoning Appeal  
 Variance  
 Miscellaneous  
 Conditional Use  
 Interpretation  
 Approved  
 Denied

Historic Preservation  
 Not in District or Landmark  
 Does Not Require Review  
 Requires Review

Action:

Approved  
 Approved with Conditions  
 Denied

Date: *[Signature]*



Location of Construction: **80 Penn Ave** Phone: **772-2127**

Owner: **A & G Associates** Business Name: **772-2127**

Lessee/Buyer's Name: **426 Forest Ave Portland, ME 04101** Phone: **772-2127**

Address: **426 Forest Ave Portland, ME 04101** PERMIT FEE: **\$ 595.00**

Proposed Use: **Single Family** FIRE DEPT.  Approved  Denied INSPECTION: **Use Group: M3 Type: 70**

Vacant Land Signature: *[Signature]* Signature: *[Signature]*

Proposed Project Description: **PEDESTRIAN ACTIVITIES DISTRICT (PAD)** Action:  Approved  Approved with Conditions  Denied

Construct Single Family Dwelling w/Attached Garage Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Taken By: **MG** Date Applied For: **05 February 1999**

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

**CERTIFICATION**  
I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

SIGNATURE OF APPLICANT \_\_\_\_\_ ADDRESS: \_\_\_\_\_ DATE: **05 February 1999** PHONE: \_\_\_\_\_

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE \_\_\_\_\_ PHONE: \_\_\_\_\_

*1071* White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19860014  
I. D. Number

Pines of Portland  
Applicant  
828 Forest Ave, Portland, ME 04101  
Applicant's Mailing Address  
Amy Mulkerin  
Consultant/Agent  
72-2127  
Applicant or Agent Daytime Telephone, Fax

2/5/99  
Application Date  
Penn Ave 80  
Project Name/Description  
80 Penn Ave  
Address of Proposed Site  
406A-C-027  
Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 80 Penn Avenue

The number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext. 8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable.

A sewer permit is required for you project. Please contact Carol Merrill at 874-8300, ext. 8828. The Wastewater and Drainage section of Public Works must be notified five (5) working days prior to sewer connection to the \_\_\_\_\_ inspector for your site.

As-built record information for sewer and stormwater service connections must be submitted to Public Works Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in performance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours, drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage

Eroded soil shall be contained on-site. A crushed stone construction entrance shall be placed in the curb cut. Silt fence shall be installed down gradient of all disturbed areas.

No vehicle access to the site from Jersey Avenue during construction and after construction the homeowner, is permitted.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

Separate permits shall be required for future decks, shed, pool, and/or garage.

As a condition to the permit and Certificate of Occupancy, no access to the property may be had by way of Jersey Avenue.

**Fire Conditions of Approval**



CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19990014

I. D. Number

City of Portland

Applicant

326 Forest Ave, Portland, ME 04101

Applicant's Mailing Address

Amy Mulkerin

Consultant/Agent

72-2127

Applicant or Agent Daytime Telephone, Fax

2/6/99

Application Date

Penn Ave 80

Project Name/Description

80 Penn Ave

Address of Proposed Site

405A-C-027

Assessor's Reference: Chart-Block-Lot

DRC Conditions of Approval

Planning Conditions of Approval

Inspections Conditions of Approval

1. Separate permits shall be required for future decks, shed, pools, and/or garage.
2. As a condition to the permit and Certificate of Occupancy, no access to the property may be had by way of Jersey Avenue.

Fire Conditions of Approval

Permit No: **99047?**

Location of Construction: **86 Penn Ave. Portland, Me.**  
 Owner: **Amy Mulhern & Greg McCormack**  
 Lessee/Buyer's Name: **Amy Mulhern & Greg McCormack**  
 Address: **426 Forest Ave. Portland, Me.**  
 Contractor Name: **Pines Of Portland Inc.**  
 Past Use: **Vacant Land**

Phone: **(207) 772-2127**  
 Business Name: **(207) 772-2127**

Phone: **(207) 772-2127**  
 COST OF WORK: **\$ 120,000.00**  
 PERMIT FEE: **\$ 620.00**

**PERMIT ISSUED**  
**MAY 13 1999**

INSPECTION: **Use Group Type 5**  
 Signature: **[Signature]**  
**PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)**

**CITY OF PORTLAND**  
 Zoning Approval: **OK 5/19**  
 Special Zone or Reviews:  
 Shoreland  
 Wetland  
 Flood Zone  
 Subdivision  
 Site Plan major  
 Minor

Signature: **[Signature]**  
 Action:  Approved  
 Approved with Conditions  
 Denied  
 Date: **May 6th, 1999**

**PERMIT ISSUED WITH REQUIREMENTS**  
 Please Call For Pickup --- 772-2127

Signature: **[Signature]**  
 Date: **May 6th, 1999**

**CERTIFICATION**  
 I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

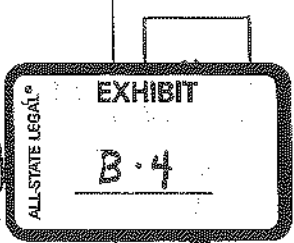
1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.  
 2. Building permits do not include plumbing, septic or electrical work.  
 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

**PERMIT TAKEN BY:** **S.P.**  
**Date Applied For:** **May 6th, 1999**

**SIGNATURE OF APPLICANT**  
**RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE**  
**Lot 2**  
**White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector**

**PERMIT TAKEN BY:** **S.P.**  
**Date:** **May 6th, 1999**

**ADDRESS:** **426 Forest Ave. Portland, Me.**  
**PHONE:** **(207) 772-2127**



CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19890060  
I. D. Number

Pines of Portland  
Applicant  
428 Forest Ave, Portland, ME 04101  
Applicant's Mailing Address  
Amy Mulkern  
Consultant/Agent  
772-2127  
Applicant or Agent Daytime Telephone, Fax

8/5/89  
Application Date  
Penn Ave 88 lot 2  
Project Name/Description  
88 Pennsylvania Ave  
Address of Proposed Site  
482A-C-030  
Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 88 Penn Avenue  
the number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext.8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable.  
A sewer permit is required for you project. Please contact Carol Merrill at 874-8300, ext. 882B. The Wastewater Engineering Section of Public Works must be notified five (5) working days prior to sewer connection to schedule an inspector for your site.

As-built record information for sewer and stormwater service connections must be submitted to Public Works Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide for positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours, drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage improvements as necessary due to field conditions.

Eroded soil shall be contained on-site. A crushed stone construction entrance shall be stalled at the curb cut.

Drainage along the left side of the house shall be directed to the rear of the lot.

Drainage along the right side of the house and off of the driveway shall be directed to the rear of the lot before it is allowed to cross the side property line.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.  
Site permits shall be required for future decks, sheds, pools, and/or garage.

Permit No: **990558**

**PERMIT ISSUED**

Permit Issued: **JUN 4 1999**

**CITY OF PORTLAND**

Zone: **A-3** CEL: **405-AP-013**  
 Zoning Approval: *OK with comments*  
 Special Zoning Review  
 Shoreland  
 Wetland  
 Flood Zone  
 Subdivision  
 Site Plan major  
 Minor

Zoning Appeal  
 Variance  
 Miscellaneous  
 Conditional Use  
 Interpretation  
 Approved  
 Denied

Historic Preservation  
 Not in District or Landmark  
 Does Not Require Review  
 Requires Review

Action:  
 Approved  
 Approved with Conditions  
 Denied  
 Date: \_\_\_\_\_

ALL-STATE LEGAL  
**EXHIBIT**  
**B-5**  
 CEO

Location of Construction: **9 Penn Avenue** Phone: **772-2127**

Owner: **Planes of Portland, ME 04101** Business Name: \_\_\_\_\_

Lessee/Buyer's Name: \_\_\_\_\_ Phone: **772-2127**

Address: **426 Forest Ave Portland, ME 04101** PERMIT FEE: **\$ 620.00**

Proposed Use: **New Single Family** COST OF WORK: **\$ 120,000**

**Vacant** FIRE DEPT.  Approved  Denied INSPECTION: **Use Group A Type 5**

Signature: *[Signature]* Signature: *[Signature]*

**PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)** Action:  Approved  Approved with Conditions  Denied

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Taken By: **SP** Date Applied For: **5-21-99**

Proposed Project Description:  
**Construct single family with attached garage**

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.  
 2. Building permits do not include plumbing, septic or electrical work.  
 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

**\*\*\*\*\* Call for P/U 772-2127**

**PERMIT ISSUED WITH REQUIREMENTS**

**CERTIFICATION**  
 I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

SIGNATURE OF APPLICANT: \_\_\_\_\_ ADDRESS: \_\_\_\_\_ DATE: **5-21-99**  
 RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE: **to 4** PHONE: \_\_\_\_\_  
 White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

19990066  
I. D. Number

5/21/89  
Application Date  
Penn Ave  
Project Name/Description

City of Portland

Applicant

426 Forest Ave, Portland, ME 04101

Applicant's Mailing Address

Amy Mulkern

Consultant/Agent

772-2127

Applicant or Agent Daytime Telephone, Fax

91 Penn Ave

Address of Proposed Site

405A-F-013

Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 91 Penn Avenue

the number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext.8722) must be notified five (5) working days

prior to date required for final site inspection. Please make allowances for completion of site plan requirements

determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must

be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of

Occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable.

A sewer permit is required for your project. Please contact Carol Merritt at 874-8300, ext. 6828. The Wastewater

and Engineering Section of Public Works must be notified five (5) working days prior to sewer connection to

check with an inspector for your site.

As-built record information for sewer and stormwater service connections must be submitted to Public Works

Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in

conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide

a positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor

elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours,

drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices

and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage

improvements as necessary due to field conditions.

Eroded soil shall be contained on-site. A crushed stone construction entrance shall be installed at the curb

at

Silt fence and erosion control measures shall be installed in conformance with the requirements of a Tier 1

Best Management Practices Permit issued by Medley and U.S. Army Corps. of Engineers.

The drive shall pitch away from the garage.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

The permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

Site permits shall be required for future decks, sheds, pools, and/or garage.

Permit No: 990560

PERMIT ISSUED  
 JUN 7 1999

CITY OF PORTLAND

Zone: CBL 405-AF-008

Zoning Approval: *OK with conditions*  
 Special Zone or Reviews: *NYA*  
 Wetland  
 Shoreland  
 Flood Zone  
 Subdivision  
 Site Plan maj. Minor *Comm*

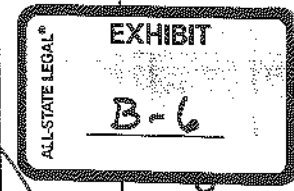
Zoning Appeal  
 Variance  
 Miscellaneous  
 Conditional Use  
 Interpretation  
 Approved  
 Denied

Historic Preservation  
 Not in District or Landmark  
 Does Not Require Review  
 Requires Review

Action:

Approved  
 Approved with Conditions  
 Denied

Date: *[Signature]*



CEO DISTRICT

Location of Construction: 04103 Pines of Portland, Inc 04103 Phone: 772-2127

Owner: Pines of Portland, Inc 04103 Phone: 772-2127  
 Lessee/Buyer's Name: Phone: Business Name: 772-2127

Contractor Name: Pines of Portland, Inc. Address: 426 Forest Ave. Portland, ME 04101 Phone: 772-2127

Past Use: Vacant Proposed Use: 1-Family w/attached garage FIRE DEPT. Type: 50  
 COST OF WORK: \$125,000 PERMIT FEE: \$ 645.00

INSPECTION: PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)  
 Use Group: *NYA* Signature: *[Signature]*

Action:  Approved  Approved with Conditions  Denied

Signature: Date: *May 25, 1999*

Proposed Project Description: Build new single family home with attached garage.

Permit Taken By: UB Date Applied For: May 25, 1999

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

\*\*\*\*\*Call Amy for Pick Up 772-2127

CERTIFICATION  
 PERMIT ISSUED WITH REQUIREMENTS

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

SIGNATURE OF APPLICANT ADDRESS: 5-26-99 DATE: PHONE:

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE PHONE:

Lot 6 White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

18990067  
I. D. Number

City of Portland  
Applicant  
426 Forest Ave, Portland, ME 04103  
Applicant's Mailing Address  
Greg McCormick  
Consultant/Agent  
772-2127  
Applicant or Agent Daytime Telephone, Fax

5/26/99  
Application Date  
Penn Ave 79  
Project Name/Description

78 Penn Ave  
Address of Proposed Site  
408A-F-8  
Assessor's Reference: Chart-Block-Lot

**DRC Conditions of Approval**

Approved subject to Site Plan Review (Addendum) Conditions of Approval:

All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland standards prior to issuance of a Certificate of Occupancy.

Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

Your new street address is now 79 Penn Avenue, the number must be displayed on the street frontage of your house prior to issuance of a Certificate of Occupancy.

The Development Review Coordinator (874-8300 ext. 8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

Show all utility connections: water, sanitary, sewer, storm drain, electric, telephone, cable. A sewer permit is required for your project. Please contact Carol Merritt at 874-8300, ext. 8828. The Wastewater and Drainage section of Public Works must be notified five (5) working days prior to sewer connection to schedule an inspector for your site.

A street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

As-built record information for sewer and stormwater service connections must be submitted to Public Works Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

The building contractor shall check the subdivision recording plat for pre-determined first floor elevation and establish the first floor elevation (FFE) and sill elevation (SE) to be set above the finish street/curb elevation to allow for positive drainage away from entire footprint of building.

The site contractor shall establish finish grades at the foundation, bulkhead and basement windows to be in conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide for positive drainage away from entire footprint of building.

A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor elevation (FFE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours, drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices and locations and outlets for drainage from the property.

The Development Review Coordinator reserves the right to require additional lot grading or other drainage improvements as necessary due to field conditions.

Eroded soil shall be contained on site. Silt fence shall be installed down gradient of all disturbed areas. A crushed stone construction entrance shall be placed within the curb cut.

**Planning Conditions of Approval**

**Inspections Conditions of Approval**

CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
ADDENDUM

18890067

I. D. Number

Pines of Portland

Applicant

426 Forest Ave, Portland, ME 04103

Applicant's Mailing Address

Greg McCormick

Consultant/Agent

772-2127

Applicant or Agent Daytime Telephone, Fax

5/26/99

Application Date

Penn Ave 72

Project Name/Description

78 Penn Ave

Address of Proposed Site

405A -F--B

Assessor's Reference: Chart-Block-Lot

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
2. Separate permits shall be required for future decks, sheds, pools, and/or garage.
3. The side lot lines are right on the setbacks required. The code enforcement officer may require a survey shot to make sure of accuracy of setbacks.

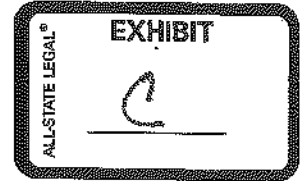
Fire Conditions of Approval



**From:** Penny Littell  
**To:** Marge Schmuckal, Sam Hoffses  
**Date:** Fri, Feb 5, 1999 3:14 PM  
**Subject:** Penn Ave

Please make sure that a condition on any building permit and certificate of occupancy notes that no access to the property may be had by way of Jersey Ave. Amy Mulkerin has already agreed to this.

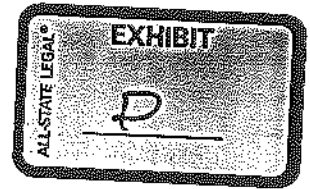
Call me with any questions.



Corporation Counsel  
Gary C. Wood



**CITY OF PORTLAND**



Associate Counsel  
Charles A. Lane  
Elizabeth L. Boynton  
Donna M. Katsiasficas  
Penny Littell

February 17, 1999

Amy Mulkerin  
Mulkerin Associates  
426 Forest Avenue  
Portland, Maine 01404

Dear Amy:

I wrote to you on February 9, 1999 requesting that you forward certain information to me, namely:

- A copy of the Tier One NRPA Army Corps permit received for the Penn Avenue area;
- A plat which clearly identifies the numbered lots in your development on Penn Avenue;
- A map, with tax map and lot numbers, showing the entire property in the area of Penn Avenue which is within your ownership, and any adjacent lots which you may have conveyed;
- In addition there shall be a note on the plan, and included in the deeds to each of the six lots being developed, that there shall be no access to the lots from Jersey Street.

Could you let me know when I will receive this information from you?

Thank you for your attention to this matter.

Sincerely,

*Penny Littell*  
Penny Littell

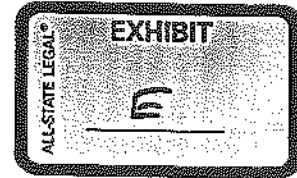
Cc: Anthony Lombardo, Project Engineer  
Jim Wendel, Development Review Coordinator  
Alex Jaegerman, Chief Planner

O:\WP\PENNY\LTRS\milk0217.doc

Planning & Urban Development



## CITY OF PORTLAND



Joseph E. Gray Jr.  
Director

April 21, 1999

Mr. Greg McCormack  
Pines of Portland Inc.  
426 Forest Avenue  
Portland, ME 04101

*See "Site" marker  
there will be 6 lots*

RE: Wyoming Avenue Subdivision

Dear Mr. McCormack:

After review of the Wyoming Avenue Subdivision plan submitted April 13, 1999, the following comments were made. These comments shall be addressed or the plan shall be revised accordingly.

1. The requirements for the development of 14-403 streets are the same as for the development of new subdivisions and new streets. The applicant, therefore, must submit the plans and supporting materials required under Article IV-Subdivisions...in Chapter 14, Land Use Regulations of the City Ordinance. The applicant does not, however, need Planning Board approval, but only staff review and approval.
2. The applicant shall submit the original subdivision plan of this area.
3. This area of Portland, historically, has drainage problems. The applicant, therefore, must provide a stormwater management plan, including drainage calculations for pre and post-development runoff. The watershed needs to be modeled to determine the peak elevation on the inlet side of the proposed culvert crossing. Sizing calculations must be provided for the proposed culvert.
4. The applicant must provide evidence of DEP permit applications and approvals for the proposed culvert crossing and wetland filling.
5. Storm drain laterals need to be specified on the plans for Lots 3 & 4. Proposed foundation and basement drains should connect into the storm drain laterals and connect into the proposed underdrain system in the street.
6. The proposed driveway openings are not drawn per City of Portland Technical and Design Standards. Driveway openings must be drawn four (4) feet wider at the street gutter line than at the edge of the right of way.

O:\PLANDEV\REV\WYOMING\LETTERS\MCCOR4-2.WPD

7. The applicant has not specified an appropriate snow plow turnaround. The hammerhead dead end, as specified, will result in the blockage of the driveway to Lot 5 during winter snow plow operations. Public Works is requesting the applicant extend the paved construction of the street to the end of both Lots 3 & 4. The required snow plow turn-around, as specified in the Technical Standards, should be constructed at the end of the street. Please keep in mind that a dedicated easement to the City must be specified on the plans for the portion of this turnaround that extends into private property.
8. The plans should specify the distance to the nearest fire hydrant on Virginia Street.
9. The plans must specify seven (7) feet long granite tipdown curb on each side of driveway openings.
10. The applicant must provide a construction detail, drawn to City of Portland Technical and Design Standards, for the proposed driveways.
11. Per the City Standards, the applicant must provide a four (4) feet wide vegetated esplanade on both sides of the street, between the curb and sidewalk.
12. The applicant must provide either an galvanized aluminum or pressure treated timber guardrail on both sides of the street, adjacent to the proposed culvert crossing.
13. Applicant must provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.
14. The applicant shall submit a standard boundary survey prepared and stamped by a registered land surveyor.
15. Applicant must provide a lighting plan showing the location, design, height and spacing from each other of the support poles in accordance with City standards and specifications.
16. A landscaping plan must be provided showing groups of existing, sizeable trees which the applicant intends to preserve. A total of two (2) trees per lot, which shall be street trees, shall be planted near the street line in full public view on private property, as directed by the city arborist.
17. Evidence of the applicant's financial capability must be provided to the City.
18. The applicant must provide evidence that they have the right, title and interest to Wyoming Avenue.

If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

*Kandice Talbot*

Kandice Talbot



**CITY OF PORTLAND**

9 June 1999

Mr. Gregory T. McCormack,  
Mulkerin Associates Real Estate,  
426 Forest Avenue,  
Portland, Maine 04101

**RE: Sanitary Sewer Capacity of the City Sewer System and the Portland Water District Sewage Treatment Facilities to Handle Anticipated Wastewater Flows, from the Proposed "Pines of Portland" Subdivision.**

Dear Mr. McCormack:

Both the existing eight inch diameter sanitary sewer pipe, crossing Wyoming Street, from Racine Avenue upstream, to Kansas Avenue downstream and the Portland Water District sewage treatment facilities, located off Marginal Way, have adequate capacity to transport and treat the anticipated wastewater flows of 1,890 GPD, from your proposed subdivision, to be built at #57 to #79 and #58 to #80 Wyoming Avenue, City of Portland.

**Anticipated Wastewater Flows from the Proposed Subdivision**

Three Proposed Three-Bedroom Houses @ 270 GPD/Dwelling	= 0,810 GPD
Three Proposed Four-Bedroom Houses @ 360 GPD/Dwelling	= 1,080 GPD
<b>Total Proposed Increase in Wastewater Flows for this Project</b>	<b>= 1,890 GPD</b>

If I can be of further assistance, please call me at 874-8832.

Sincerely,  
**CITY OF PORTLAND**

*Frank Brancely*  
Frank J. Brancely, BA, MA  
Senior Engineering Technician

FJB

- cc: Joseph E. Gray, Director, Department of Planning & Urban Development, City of Portland
- ✓ Kandi Talbot, Planner, Dept. of Planning & Urban Development, City of Portland
- Katherine A. Staples, PE, City Engineer, City of Portland
- Bradley A. Roland, PE, Environmental Projects Engineer, City of Portland
- Anthony W. Lombardo, PE, Project Engineer, City of Portland
- Stephen K. Harris, Assistant Engineer, City of Portland
- Desk File

# MAINE BANK & TRUST

May 25, 1999

Joseph E. Gray, Jr., Director  
Planning and Urban Development  
City of Portland  
Portland, Maine 04101

Re: Amy Mulkerin and Gregory McCormack - "The Pines"

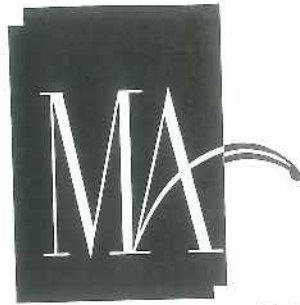
Dear Mr. Gray;

After review of financial information, Maine Bank & Trust Company believes that the above referenced borrowers are financially capable of completing their proposed construction project in "The Pines". Ms. Mulkerin and Mr. McCormack have been customers of Maine Bank & Trust Company for over 3 years and have always performed as agreed.

Sincerely,



Robert A. Harmon  
Senior Vice President



**MULKERIN ASSOCIATES  
REAL ESTATE**

May 25, 1999

Mr. Frank Brancely  
Engineer City of Portland  
Public Works Department


Re: Sewer Capacity Letter- Wyoming Ave. Extension

Dear Mr. Brancely,

The purpose of this letter is to request a sewer capacity letter concerning the development of six single family homes to be located off Wyoming Avenue off Virginia Street.

Each home will contain 3 or 4 bedrooms. I would guess there will be three (3) bedrooms and (3) (4) bedroom homes. Based on 90 gal./day/bedroom, the expected flow will be 1890 gal/day. The discharge point is as shown on the enclosed plan.

Sincerely,

  
Gregory T. McCormack  
Pines of Portland, Inc.

*Being E-mailed to Kandi  
from Frank Brancely @ Public Works*

May 25, 1999

Mr. Robert Ganley  
City Manager  
389 Congress Street  
Portland, ME 04101

*Hand:  
Penny could tell you  
how we will handle this.  
We talked with Bob  
Ganley today  
Jare*

Dear Mr. Ganley:

Please allow this letter as an attempt to clarify our position and intentions regarding the improvement of streets via Sec 14-403 of the Portland City Codes in order to service residential lots at "The Pines" a subdivision recorded in the Cumberland County Registry of Deeds:

- **We are building a public road to city standards and specifications.** This is a choice we made prior to purchasing the property. We are providing a high-quality infrastructure and avoiding the possible problems of a private road,
- **Improvement of Area Drainage.** We have spent thousands of dollars on engineering to insure proper water drainage and run-off. Fortunately, there exists a large natural drainage basin in the area. Tom Greer of the highly respected firm of Pinkham & Greer has designed the drainage system to IMPROVE the area as a whole.
- **Upscale neighborhood** with values twice that of the immediate vicinity, as well as above average lot sizes for the surrounding area. We have spent thousands of dollars on our home designs known as the "Deering Collection". They reflect turn of the century Portland designs. This will be, by far, the nicest new neighborhood in the city.
- **It is not our intention to escape all city review.** The City has had and will have control over this project i.e. planning staff, review approval, public works review and approval and the inspection process.

We do not want to be punished for past developments or developers debacles. We have been very involved with the City of Portland for 25 years and care very much not only for Portland but our reputations. This project is an asset to the city. One I would think you'd like to promote rather than hinder its progress. We would respectfully request a meeting with you within the next week in order to answer any further questions.

Sincerely,

*Amy K. Mulkerin*  
Amy K. Mulkerin & Gregory T. McCormack





Attorneys At Law

May 26, 1999

VIA TELEFAX  
 Penny Littell, Esq.  
 Corporation Counsel's Office  
 City of Portland  
 Portland City Hall  
 389 Congress Street  
 Portland, Maine 04101-3509

E. Stephen Murray  
 Peter S. Plumb  
 Adam C. Lightbody  
 Thomas C. Newman  
 John C. Barron  
 Susan D. Thomas  
 Drew A. Anderson  
 Richard L. O'Meara  
 Barbara T. Schneider  
 Christopher B. Branson  
 Charles P. Piacentini, Jr.  
 Michael D. Traister  
 Rita S. Saliba

Counsel:  
 Peter L. Murray  
 Charlene S. Smith

75 Pearl Street  
 Post Office Box 9785  
 Portland, Maine  
 04104-5085

Telephone:  
 207.773.5651

Facsimile:  
 207.773.8023

E-Mail:  
 info@mpmlaw.com

www:  
 mpmlaw.com

RE: Pines of Portland / Development in the Area of Penn and Wyoming Avenues

Dear Penny:

Thank you for speaking with me yesterday about the above matter. I am writing to follow up on our conversation, and to attempt to continue a dialogue with the City before its position becomes cast in stone.

First, I wish to clear up an apparent misunderstanding about the circumstances under which my clients purchased the property from the City. You evidently have in your possession two early drafts of a purchase and sale contract between MJM Associates and the City which include the contingency that MJM obtain "Portland Planning Board Approval for a minimum of 15 Building Lots." You will also notice that the proposed purchase price was \$ 50,000.

I have attached to this letter a copy of the final contract, dated March 16, 1998, which is between the City and a different entity, "A & G Associates." Significantly, (1) there is no contingency for obtaining Planning Board approval for any number of lots, and (2) the purchase price has risen to \$ 75,000.

The only reason that A & G Associates executed the final contract is because they had had conversations with City officials, including Marge Schmuckal, confirming that A & G could develop the existing subdivision subject to Section 14-403 of the Land Use Code, and without further subdivision review. If my clients had thought that the City was going to require subdivision review for their development, it is inconceivable that they would have deleted the former contingency that would have freed them from the contract if the Planning Board did not approve at least 15 subdivision lots.

May 26, 1999

Page 2

Neither would my clients have agreed to pay 50% more for the property, if they were taking an open-ended risk of having to obtain subdivision approval for the parcel.

In fact – and this is the only explanation that makes sense – my clients deleted the lot-approval contingency because they no longer required subdivision approval, and agreed to the higher sales price because they would be spared the time and expense of subdivision review. My clients are confident that if you review the history of the contracts with Mr. Tracy, his memory will be refreshed, and he will confirm my clients' memory of the transaction.

Moreover, the contract has an integration clause in Paragraph 8, stating that it "supersedes any prior Agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of any property hereunder." The City cannot attempt to cite the former contracts as evidence of any understanding between my clients and the City about the need for subdivision review. Assuming that such an understanding may have once existed, Paragraph 8 expressly voided that understanding.

Second, the City cannot reasonably contend that its prior handling of this development was merely a gesture of good faith. The City obviously cannot make a show of good faith that violates the Land Use Code. In fact, the City did not violate the Code, but instead construed the Code reasonably to allow the development under Section 14-403. There is no rational reason to depart from that approach, now.

Third, my clients have never attempted to avoid City scrutiny of the issues that were important to it. For example, I enclose the detailed memorandum from Tony Lombardo to Amy Mulkerin dated June 2, 1998, pertaining to the Penn Avenue portion of the project. Likewise I enclose a letter from Kandice Talbot to my clients concerning the Wyoming Avenue portion of the development. In neither instance did the City lose control of the project or allow my clients to proceed at their whim. Instead, my clients voluntarily submitted to substantial scrutiny of their project, and agreed to every condition the City exacted of them.

Having said all of the above, my clients wish to reiterate their desire to work with the City to achieve a reasonable resolution of the City's concerns. In an effort to meet the City more than half way, my clients are willing to

May 26, 1999

Page 3

submit for subdivision review all portions of the development except the following:

- a. The six-lot development at Wyoming Avenue, west of Virginia Avenue (diagram A);
- b. Four lots on Penn Avenue extension (identified on the accompanying diagram B as lots 1,2,3,and 4) located west of the proposed Cross Street<sup>1</sup>; and
- c. Four lots at Wyoming Avenue, east of Virginia Avenue, as shown on the accompanying diagram C.

My clients propose this compromise even though, as indicated in my prior letter, there is no legal basis on which the City can insist upon subdivision review of any portion of the 1926 Pines subdivision.

My clients wish to deal with the City on their own merits. It is unfair to punish them for the sins of other developers with whom my clients have no connection, and for whom they have no sympathy. Even if other developers have behaved irresponsibly, my clients have not. They know how important the drainage issues are for the City and for North Deering residents, and have already demonstrated their commitment to quality engineering in their handling of this project to date. The City and my clients can accomplish all of their goals, without suddenly subjecting the entire project to expensive and time-consuming subdivision review.

Thank you for your attention to this letter. I look forward to hearing from you as soon as possible.

Sincerely,



John C. Bannon

JCB/kh

---

<sup>1</sup> My clients would not construct Cross Street under this proposal, and thus would not alter the grandfathered subdivision in any way.

May 26, 1999

Page 4

cc: Mr. Greg McCormack  
Ms. Amy Mulkerin

Housing & Neighborhood Services Division  
Mark B. Adelson  
Director



Dept. of Planning and Urban Development  
Joseph E. Gray, Jr.  
Director

**CITY OF PORTLAND**

March 30, 1998

Ms. Amy Mulkerrin  
Mulkerrin Associates Real Estate  
426 Forest Avenue  
Portland, ME 04101

**RE: Purchase and Sale Contracts for the land located in the Vicinity of Maine Avenue  
and Virginia Street**

Dear Amy:

Enclosed please find the fully executed Purchase and Sale Agreements for the above referenced property.

Please contact me when you are prepared to close. My telephone number is 756-8089.

Sincerely,

William C. Tracy  
Housing Coordinator

enclosure

MJMDMK.P&SA.1  
01.20.98

**PURCHASE AND SALE AGREEMENT**

**THIS AGREEMENT** for the purchase and sale of real estate made this 16th day of March, 1998, by and between the **CITY OF PORTLAND**, a body politic and corporate located in Cumberland County, Maine (hereinafter referred to as "**CITY**"), and **A & G ASSOCIATES** of 426 Forest Ave., Portland, Cumberland County, Maine (hereinafter referred to as "**BUYER**").

**WITNESSETH:**

**WHEREAS, CITY** is the owner of certain land located in the East Deering neighborhood in Portland, Maine, by virtue of the foreclosure of real estate tax liens and sewer user assessment liens which property is more particularly described in Exhibit A; and

**WHEREAS, the BUYER** desires to acquire said property;

**NOW, THEREFORE,** in consideration of the foregoing and for other good and valuable consideration, the parties, intending to be legally bound, hereby agree as follows:

1. **SALE.**

**CITY** agrees to sell the property shown on Exhibit A, attached hereto and incorporated herein, to the **BUYER**, and **BUYER** agree to purchase said property in accordance with the provisions hereof.

2. **CONSIDERATION.**

The consideration for the property shall be \$75,000.

3. **TITLE.**

Title to the property shall be conveyed by Quitclaim Deed acceptable to the **BUYER** and shall be free of **CITY** liens.

4. **POSSESSION.**

Full possession of the property will be given at the transfer of title. The following items shall be pro-rated as of the transfer of title:

MJM.DMK.P&SA.1  
01.20.98

Real estate taxes for the fiscal year in the City of Portland, and any other special assessments which may be due on the property.

5. RISK OF LOSS.

The risk of loss or damage to the property by fire or otherwise, until transfer of title hereunder, is assumed by the CITY. The above described property is to be delivered in substantially the same condition as of the date of this Agreement unless otherwise stated.

6. CLOSING.

The closing shall be held at City Hall, at a time agreeable to the parties within 30 days of the ratification of this Agreement by the City Council. Time is of the essence in the performance of this Agreement.

7. BINDING EFFECT.

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.

8. ENTIRE AGREEMENT.

This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior Agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the property hereunder.

9. HEADINGS AND CAPTIONS.

The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.

10. GOVERNING LAW.

This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Maine.

11. NOTICE.

Any notice required or permitted under this Agreement shall be deemed sufficient if mailed with first class postage affixed or delivered in person to:

MJM,DMK,P&SA.1  
01.20.98

FOR THE CITY:

City of Portland  
ATTN: CITY MANAGER  
389 Congress Street  
Portland, ME 04101

FOR THE BUYER:

A & G Associates  
426 Forest Ave.  
Portland, ME 04101

12. DEPOSIT.

BUYER has paid to CITY the sum of \$7,500.00 as a deposit on said property. This amount shall be credited toward the final purchase price. In the event that BUYER does not complete the purchase within thirty (30) days of the ratification of this Agreement by the City Council, the deposit shall be retained by the CITY as liquidated damages.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals on the day and year first above written.

Sonia Bean  
WITNESS

CITY OF PORTLAND

By: Robert B. Ganley  
Robert B. Ganley  
Its City Manager

A & G ASSOCIATES

By: Amy K. Mulkerin  
Amy K. Mulkerin, Principal

W. D. O'G.  
WITNESS

W. D. O'G.  
WITNESS

By: Gregory T. McCormack  
Gregory T. McCormack, Principal

APPROVED AS TO FORM:

Dmy  
CORPORATION COUNSEL OFFICE



MJM,DMK,P&SA,1  
01.20.98

Exhibit A

Certain lots or parcels of land known as Tax Map and Lots 399-D-5 to 17; 404-B-8 to 14; 400-A-20 to 25, 39 to 47; 404-C-18 to 22-29 to 38; 404-D-1 to 13; 404-F-23-24-7-8; 404-H-7 to 8, 23-24; 404-I-1 to 31; 404-L-1 to 14; 405A-B-1 to 13; 405A-C-8 to 19-27 to 38; 405A-D-1 to 23; 405A-F-8 to 19; 405A-K-1 to 22; 404-H-11 to 22-27 to 38; 404-F-11 to 22 & 27-28; 404-F-29 to 38; 404-G-1 to 34; 404-K-5 to 16; 405A-A-8 to 19; 405A-G-1 to 24 as shown on the maps of the Tax Assessor of the City of Portland for the fiscal year 1997.

8-07-1998 0:20AM

FROM PORTLAND PUBLIC WRKS 2078748915

P. 1

Department of Public Works

Post-It® Fax Note	7671	Date	8/7	# of pages	2
To	Amy Mulkerin	From	Nancy K		
City/Dept.	P & S	City			
Phone #		Phone #			
Fax #	871-8695	Fax #			

CITY OF

## PUBLIC WORKS ENGINEERING MEMORANDUM

To: Amy Mulkerin, Mulkerin Associates

From: Anthony Lombardo, P.E., Project Engineer *Anthony W. Lombardo*

Date: June 2, 1998

Subject: Penn Avenue ..... Building the unaccepted portion from Virginia Ave. to City Line

The following comments were generated during Public Works Engineering review of the plans dated May 7, 1998. Under Section 14-403 of the City of Portland Zoning Ordinance, Public Works has review authority of proposals to develop "paper streets". The comments listed below are the result of plan review and site inspection.

- DONE* • The plan and profile prepared by Pinkham & Greer must specify perforated underdrain in both the plan and profile views.
- The existing soil conditions are extremely poor draining in the site area. Proposed homes will probably be built up on fill material, resulting in yards directing runoff southerly towards Vermont Ave. and northerly towards proposed Penn Ave. Currently, residents in the Vermont Ave. neighborhood experience water seepage into basements and ponding water in their rear yards. Therefore, as part of a condition of approval, I am requesting the applicant provide the following:

- DONE* 1. Twenty (20) feet wide drainage easements along the rear of the proposed lots on the southerly side of Penn Ave. This easement should appear on the "Recording Plat.
2. A two (2) feet deep and fifteen (15) feet wide drainage ditch must be constructed within this easement as part of the construction of any portion of Penn Ave.
- DONE* 3. Storm drain laterals must be installed to the edge of Penn Ave. right of way for each individual proposed lot to provide the ability to drain the basements and foundations of future homes. These pipes must connect into the proposed 12" dia. storm drain in Penn Ave. The laterals must be a minimum of 6" diameter. This information must be specified on the "Plan & Profile" prepared by Pinkham & Greer.
- DONE* 4. Underdrain, 6" diameter, must be installed on both sides of the street and needs to be specified on "Plan & Profile".

8-07-1998 8:21AM

FROM PORTLAND PUBLIC WORKS 2078719816

P. 2

- The "Plan & Profile" specifies a portion of the proposed culvert extending into a proposed lot. A drainage easement should be specified for any portion of this culvert extending into private property.
- The Montana Street right of way should be specified on the "Plan & Profile". The City's Virginia-Carter Interceptor Sewer runs through this right of way. The existing sewer manhole located at the intersection of the Montana St. and Penn Ave. right of ways must be core drilled to accept the proposed 8" sanitary sewer main. A City sewer inspector must be contacted to witness the connections into the City sewer. DONE
- Sanitary sewer stubs must be provided for each individual house lot and the services must be 6" minimum diameter. These should be specified on the "Plan & Profile". DONE
- Penn Ave. must be built with granite curb specified on both sides of the street, including radius granite at the intersection of Virginia St. and Penn Ave. ADA sidewalk ramps must be built on both sides of the street at this intersection. Seven (7) feet long granite tipdown curb must be installed at the edge of all driveway entrances. DONE
- Bituminous sidewalks must be built on both sides of the street for the entire length of Penn Ave. TBD
- The "Erosion & Sediment Control Plan", specified by Pinkham & Greer, must be followed closely by the contractor and developer. These measures must be installed prior to any development of Penn Ave. DONE
- The applicant or their engineer must provide evidence of "permit approval" for the proposed stream crossing. DONE
- Lastly, Public Works Engineering is requiring the developer provide us with "As-Built Drawings" of Penn Ave. and the associated utilities installed. These plans must specify pipe location, diameter, length and slopes, as well as catch basin and manhole invert information. TBD.

These are the conditions for approval to develop Penn Ave. All of these conditions must be met prior to the acceptance of Penn Ave. as a City street.

cc: Katherine A. Staples, P.E., City Engineer  
 Alex Jaegerman, Chief Planner  
 Marge Schmukal, Inspections  
 Cheryl Leeman, District Councilor  
 Thomas Greer, P.E., Pinkham & Greer

←  
 Note:  
 John

Planning & Urban Development



Joseph E. Gray Jr.  
Director

## CITY OF PORTLAND

April 21, 1999

Mr. Greg McCormack  
Pines of Portland Inc.  
426 Forest Avenue  
Portland, ME 04101

*See "Site" marker  
there will be 6 lots*

RE: Wyoming Avenue Subdivision

Dear Mr. McCormack:

After review of the Wyoming Avenue Subdivision plan submitted April 13, 1999, the following comments were made. These comments shall be addressed or the plan shall be revised accordingly.

1. The requirements for the development of 14-403 streets are the same as for the development of new subdivisions and new streets. The applicant, therefore, must submit the plans and supporting materials required under Article IV-Subdivisions...in Chapter 14, Land Use Regulations of the City Ordinance. The applicant does not, however, need Planning Board approval, but only staff review and approval.
2. The applicant shall submit the original subdivision plan of this area.
3. This area of Portland, historically, has drainage problems. The applicant, therefore, must provide a stormwater management plan, including drainage calculations for pre and post-development runoff. The watershed needs to be modeled to determine the peak elevation on the inlet side of the proposed culvert crossing. Sizing calculations must be provided for the proposed culvert.
4. The applicant must provide evidence of DEP permit applications and approvals for the proposed culvert crossing and wetland filling.
5. Storm drain laterals need to be specified on the plans for Lots 3 & 4. Proposed foundation and basement drains should connect into the storm drain laterals and connect into the proposed underdrain system in the street.
6. The proposed driveway openings are not drawn per City of Portland Technical and Design Standards. Driveway openings must be drawn four (4) feet wider at the street gutter line than at the edge of the right of way.

O:\PLAMDEV\REV\WWWYOMING\LETTERS\MCCOR4-2.WPD

7. The applicant has not specified an appropriate snow plow turnaround. The hammerhead dead end, as specified, will result in the blockage of the driveway to Lot 5 during winter snow plow operations. Public Works is requesting the applicant extend the paved construction of the street to the end of both Lots 3 & 4. The required snow plow turn-around, as specified in the Technical Standards, should be constructed at the end of the street. Please keep in mind that a dedicated easement to the City must be specified on the plans for the portion of this turnaround that extends into private property.
8. The plans should specify the distance to the nearest fire hydrant on Virginia Street.
9. The plans must specify seven (7) feet long granite tipdown curb on each side of driveway openings.
10. The applicant must provide a construction detail, drawn to City of Portland Technical and Design Standards, for the proposed driveways.
11. Per the City Standards, the applicant must provide a four (4) feet wide vegetated esplanade on both sides of the street, between the curb and sidewalk.
12. The applicant must provide either an galvanized aluminum or pressure treated timber guardrail on both sides of the street, adjacent to the proposed culvert crossing.
13. Applicant must provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.
14. The applicant shall submit a standard boundary survey prepared and stamped by a registered land surveyor.
15. Applicant must provide a lighting plan showing the location, design, height and spacing from each other of the support poles in accordance with City standards and specifications.
16. A landscaping plan must be provided showing groups of existing, sizeable trees which the applicant intends to preserve. A total of two (2) trees per lot, which shall be street trees, shall be planted near the street line in full public view on private property, as directed by the city arborist.
17. Evidence of the applicant's financial capability must be provided to the City.
18. The applicant must provide evidence that they have the right, title and interest to Wyoming Avenue.

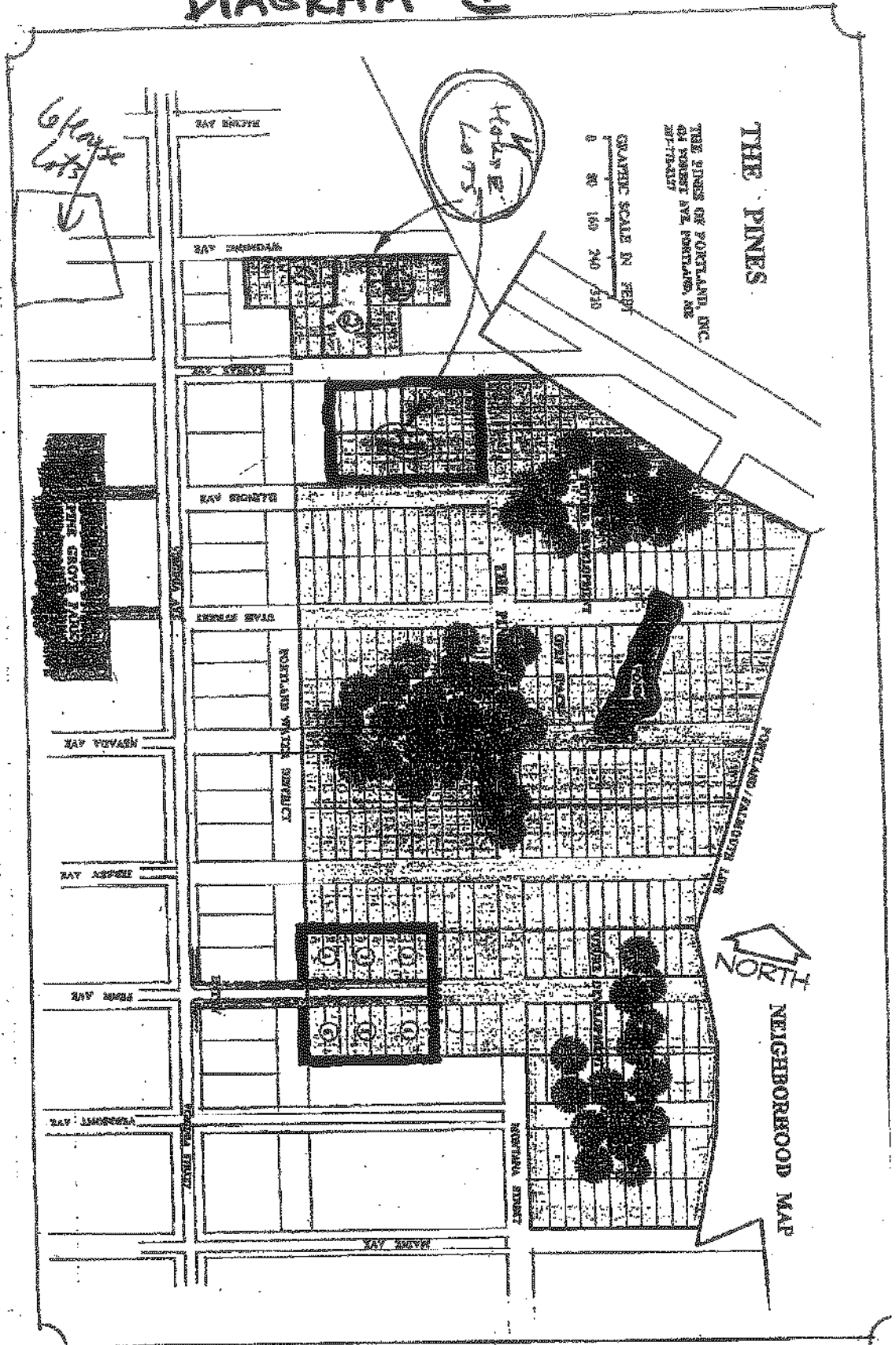
If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

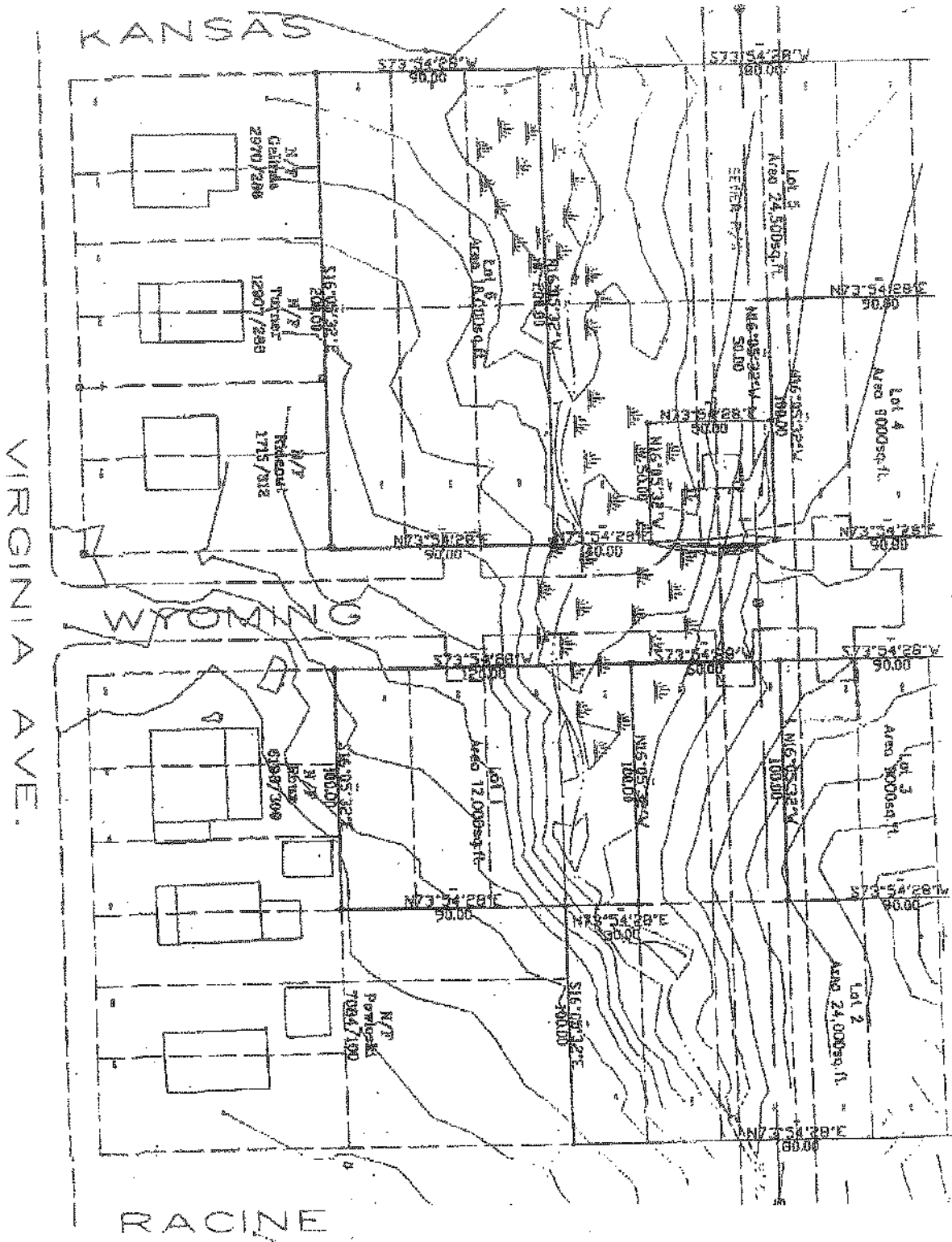
*Kandice Talbot*

Kandice Talbot

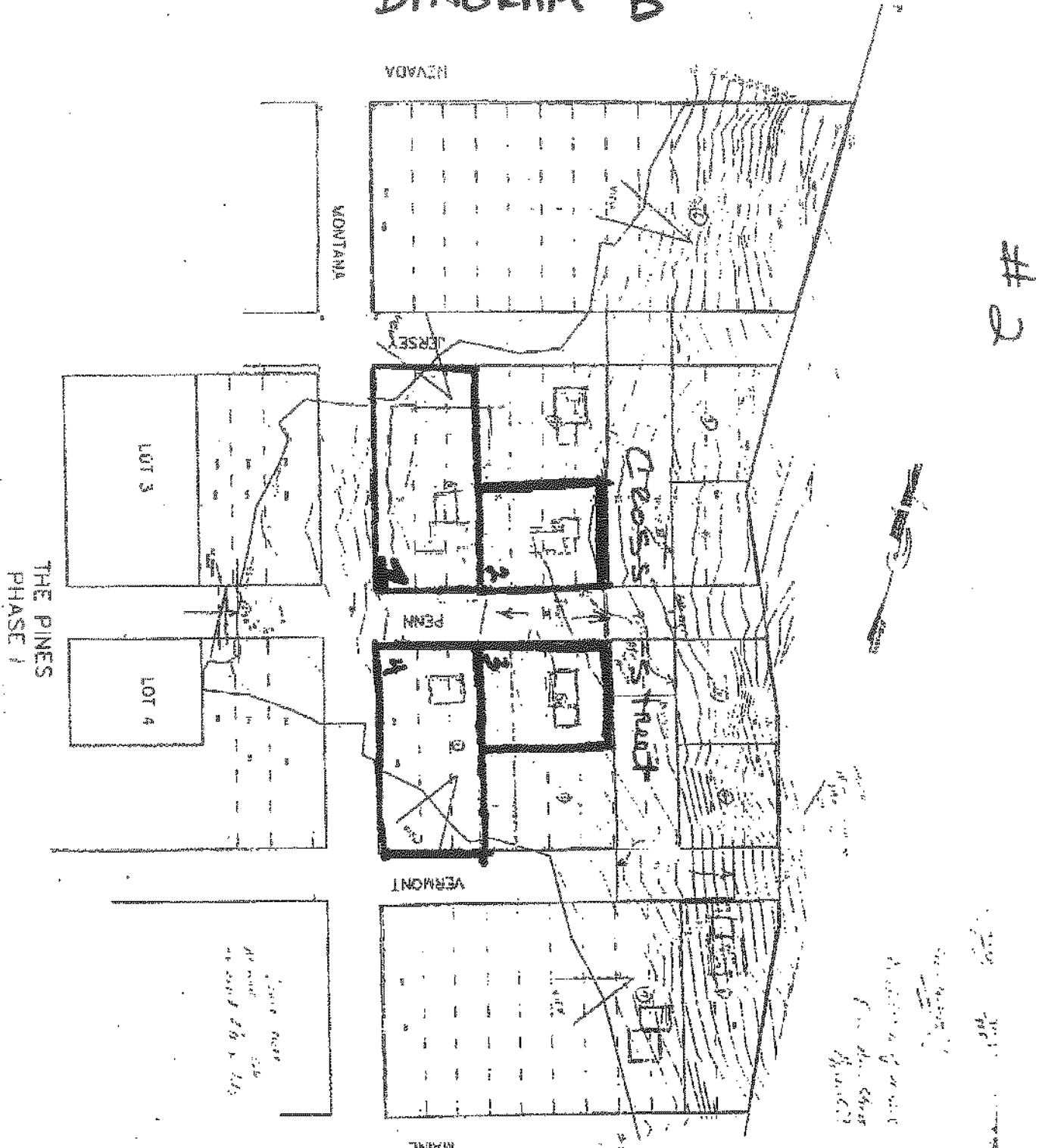
# DIAGRAM C



# DIAGRAM A



# DIAGRAM B



# 2

THE PINES  
PHASE I

100' x 150'  
AS SHOWN ON  
AS SHOWN ON

Location Map

**NOTES:**

(1) Deed Reference:  
3067/19 C.C.R.D.  
14056/50 C.C.R.D.

(2) Plan Reference:

(a) "The Pines"  
May 1926.  
Plan Book 27, Page 7 C.C.R.D.

(b) Plan Prepared for  
Richard P. Libby  
by Reed Surveying, Inc.  
Sept. 19, 1988

(3) Zoning:  
R-3

(4) Tax Map Reference  
Tax Map 100  
Section A - Lots 20-25  
39-47  
Section B - Lots 12-20  
31-39

## THE PINES





MULKERIN ASSOCIATES  
REAL ESTATE

## FAX COVER SHEET

Date: May 17, 1999

Total Pages: 4

To: Alex Jaegerman

Company Fax #:

From: Greg McCormack/Amy Mulkerin

Subject: Kansas Ave Lot.

Dear Alex,

We have a young doctor who would like to build a new home on a single large lot on about 1 acre about 60 feet beyond the improved end of Kansas Ave. Could you advise us how a building permit may be obtained ASAP. Thank you for meeting with us the other day.

Sincerely, *Amy Mulkerin*

CALL US AT 772-2127 IF THERE ARE ANY PROBLEMS.

426 Forest Avenue, Portland, ME 04101  
207-772-2127 Fax: 207-871-8885

# THE PINES

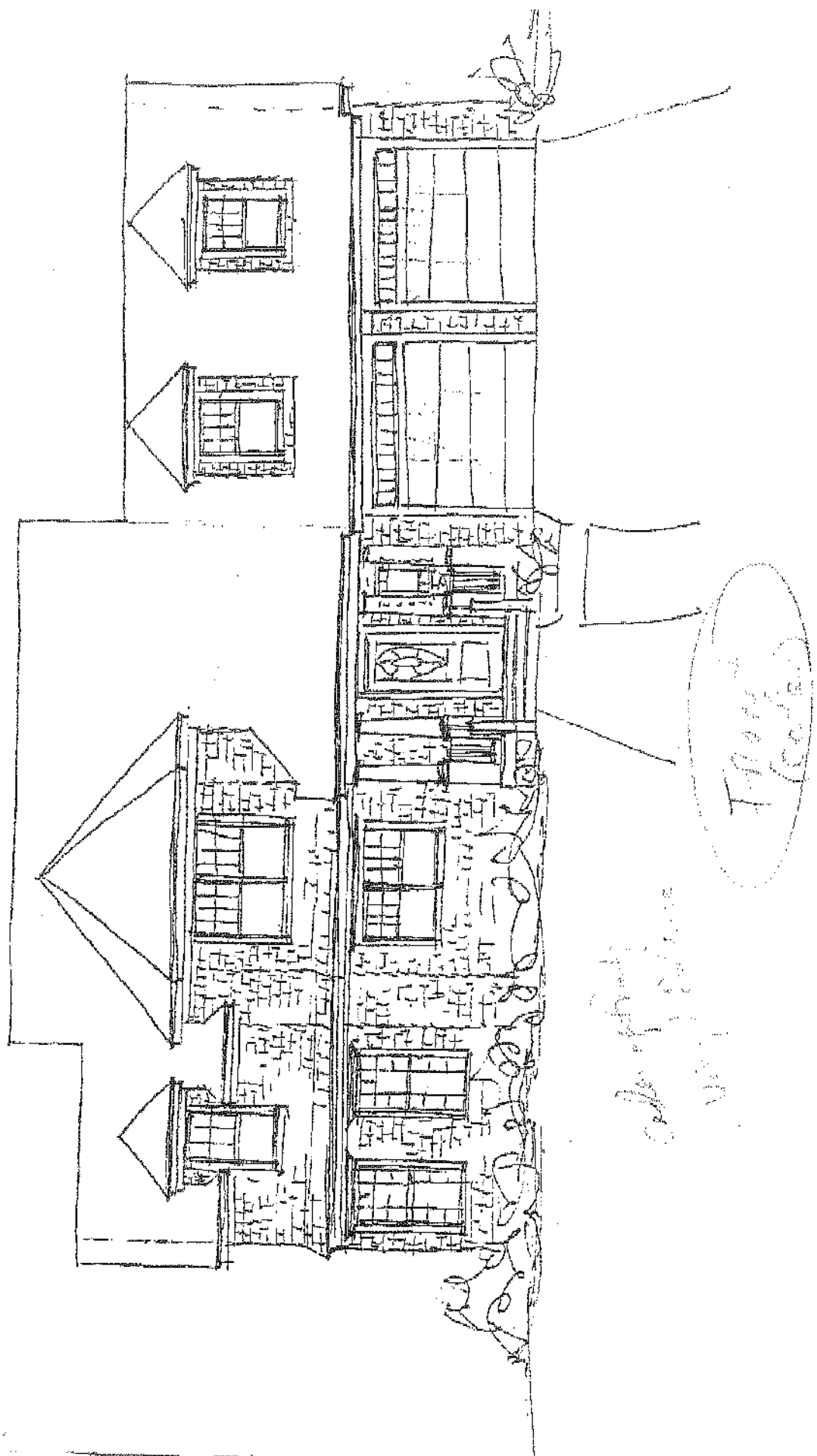
THE PINES OF PORTLAND, INC.  
416 FOREST AVE, PORTLAND, ME  
507-773-3127

GRAPHIC SCALE IN FEET  
0 80 160 240 320

House Lot

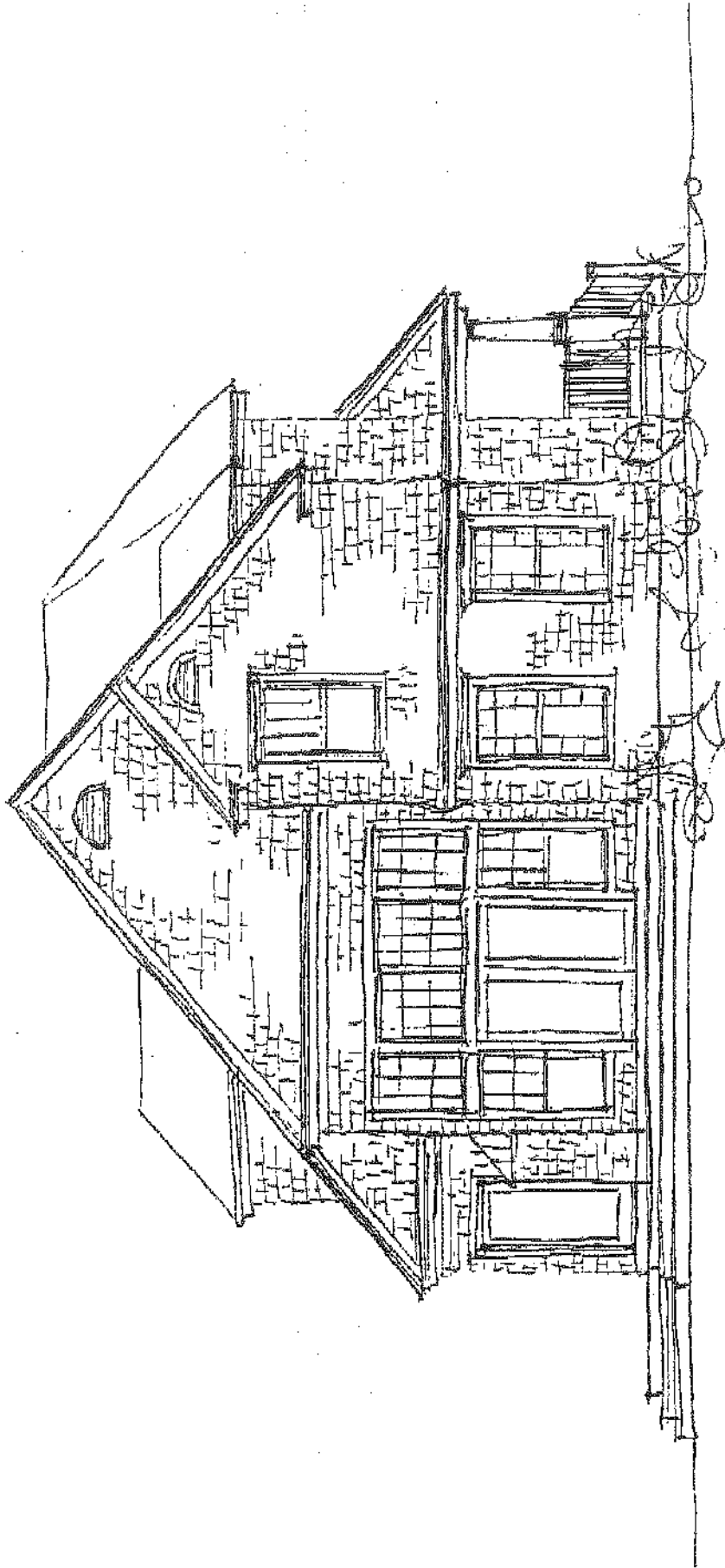
NEIGHBORHOOD MAP  
NORTH





Front  
Elevation

W. H. ...



May 14, 1999

Meeting City of Portland and Pines of Portland, Inc.

Topics:

1.) Extension of Penn Ave. and Construction of New Street

To serve lots in grandfathered subdivision known as  
"The Pines" recorded in CCRD Plan Book 17, Pg 6/7 June 1926

----- Concerns Required improvements  
Level of Review per code  
Timeliness of review

2.) Extension of Wyoming Ave

----- Concerns: Level of Review  
Required improvements

3.) Kansas Ave to serve (1) home at present

----- Expedited process available  
Use of current road until further building permits  
are requested  
Ownership of land is over 3 acres.

Attached is copy of "The Pines" plan

Contiguous lots  
reconfiguring lot lines

MAY-11-1999 15:06

DEP - SMRD

2076226300 P.01

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**PERMIT BY RULE NO**  
(For use with DEP Regs)

Post-it® Fax Note 7671

Date	5/1/99	# of pages	1
To	Amy Mulleer	From	Dawn Hollowell
Co./Dept		Co.	MDEP
Phone #		Phone #	822-6300
Fax #	871-8695	Fax #	822-6303

PLEASE TYPE OR PRINT IN BLACK INK ONLY (3 COPIES, PLEASE BEAR)

Name of Applicant:	A & G Associates		
Mailing Address:	426 Forest Ave		
State:	Maine	Zip Code:	04102
Daytime Telephone No. (include area code)	207-772-2127		
Name of Wetland, Water Body or Stream:	NONE		
Detailed Directions to Site:	Allen Ave. Extension to Virginia Street to Kansas Ave. Directly across the street is Wyoming (a paper street) to be constructed.		
Town/City:	Portland	Map #:	Attached
Lot #:	Attached	County:	Cumberland
Description of Project:	Place a 36' x 74' culvert in existing stream as part of construction of Wyoming Ave.		

(CHECK ONE) This project: does  does not  involve work below mean low water.

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Regulation, Chapter 305. I have a copy of PBR Sections checked below. I have read and will comply with all of the standards.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Sec. (2) Soil Disturbance                | <input type="checkbox"/> Sec. (7) Riprap                           | <input type="checkbox"/> Sec. (13) Piers & Pilings            |
| <input type="checkbox"/> Sec. (3) Intake Pipes                    | <input type="checkbox"/> Sec. (8) Utility Crossing                 | <input type="checkbox"/> Sec. (14) Public Boat Ramps          |
| <input type="checkbox"/> Sec. (4) Replacement of Structures       | <input checked="" type="checkbox"/> Sec. (9) Stream Crossing       | <input type="checkbox"/> Sec. (15) Select Sand Dune Projects  |
| <input type="checkbox"/> Sec. (5) Movement of Rocks or Vegetation | <input type="checkbox"/> Sec. (10) State Transportation Facilities | <input type="checkbox"/> Sec. (16) Transfers/Permit Extension |
| <input type="checkbox"/> Sec. (6) Outfall Pipes                   | <input type="checkbox"/> Sec. (11) Restoration of Natural Areas    | <input type="checkbox"/> Sec. (17) Maintenance Dredging       |
|   | <input type="checkbox"/> Sec. (12) Fish & Wild. Creation/Enhance   |   |

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that *this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.*


I have attached all of the following required submittals. NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:

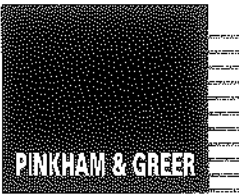
- Attach a check for \$50 (non-refundable) made payable to: "Treasurer, State of Maine".
- Attach a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.
- Attach photographs showing existing site conditions (unless not required under standards).

Signature of Applicant:		Date:	3/29/99
-------------------------	---	-------	---------

Keep the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection at the appropriate regional office listed below. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. Work carried out in violation of any standard is subject to enforcement action.

AUGUSTA DEP STATE HOUSE STATION 17 AUGUSTA, ME 04333-0017 (207)287-2111	PORTLAND DEP 312 CANCO ROAD PORTLAND, ME 04103 (207)822-6300	BANGOR DEP 106 HOGAN ROAD BANGOR, ME 04401 (207)941-4570	PRESQUE ISLE DEP 1235 CENTRAL DRIVE PRESQUE ISLE, ME 04769 (207)764-0477
--	---	---	---

OFFICE USE ONLY	Ck# 0476	Staff 	Staff
PBR # 22177	FP 50.00	Date 3/29/99	Acc. Date 3/31/99
			Def. Date
			After Photos



CONSULTING ENGINEERS, INC.

Mr. Alex Jaegerman, City Planner  
CITY OF PORTLAND  
389 Congress St.  
Portland, ME 04101-3503

170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.6245

May 10, 1999  
File: 99122

RE: WYOMING AVENUE ESPLANADE WAIVER REQUEST

Dear Alex:

On behalf of A&G Associates we request the City grant a waiver from the typical street section for Wyoming Avenue. We would like you to consider eliminating the esplanades on Wyoming and construct the sidewalks immediately behind the curb, as well as eliminating one sidewalk. There are two reasons for our request that the board should consider.

1. The Army Corp and DEP require stream crossings to be as short as practical and by eliminating the esplanades the culvert crossing is 8' shorter. This meets their goals.
2. The first section of road goes between existing properties. It is impractical for the construction to occur without impacting the abutting properties. To illustrate this we have provided actual cross-sections of the road at station 90+00 of the standard section and the requested section, see figures 1 and 2 attached. As shown the standard section extends on the abutting properties, which A&G Associates has no right to construct.

The second waiver we would like the board to consider is a sidewalk on one side only. For 6 homes, it is likely that pedestrian traffic will walk in the street, if a single sidewalk is developed it should provide adequate space for pedestrians.

Please let me know if you have any questions.

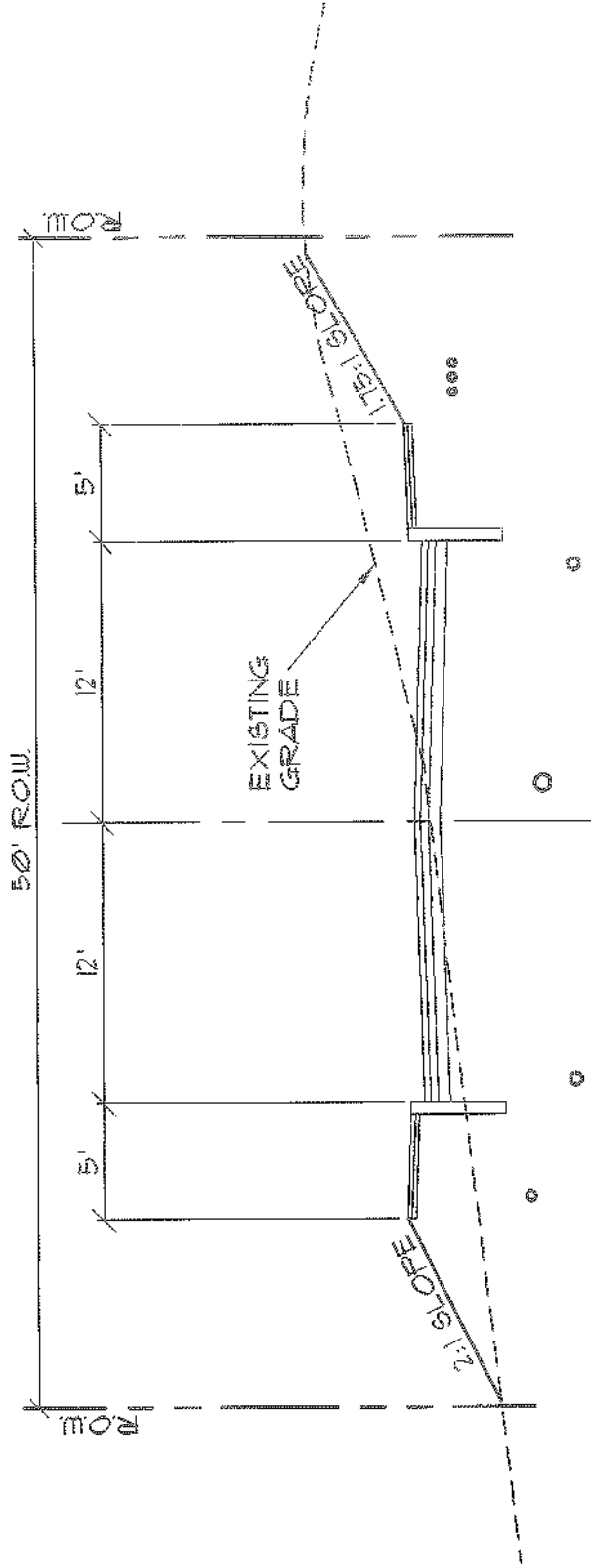
Sincerely,

PINKHAM & GREER

A handwritten signature in cursive script, appearing to read "Thomas S. Greer".

Thomas S. Greer, P.E.

TSG/lk  
C: A&G Associates

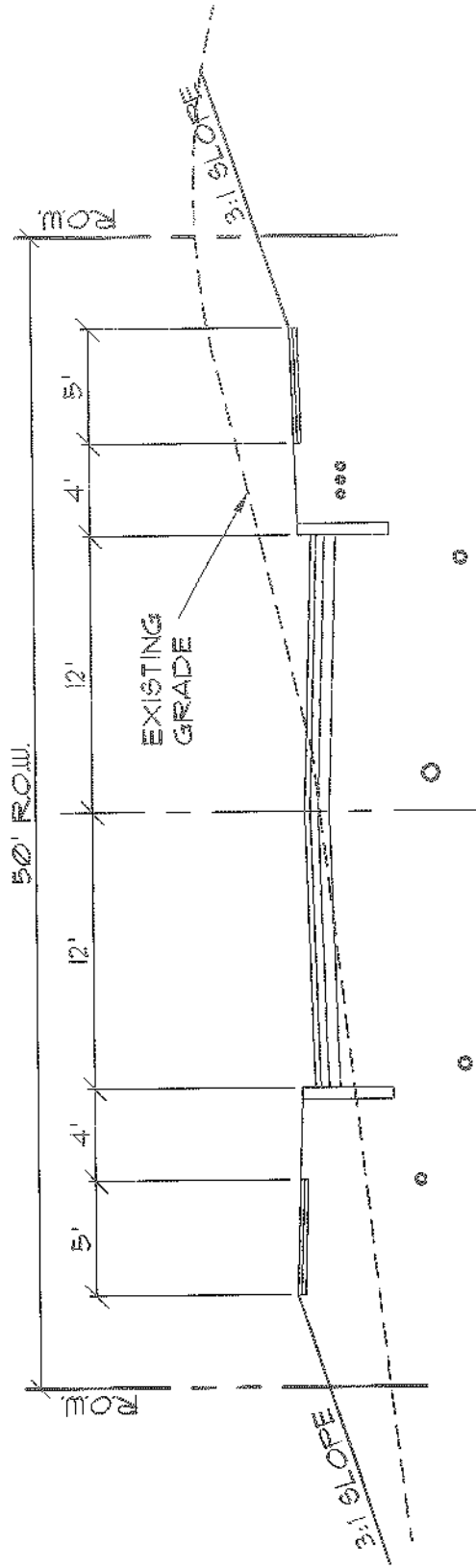


WAIVER REQUEST: THIS ROAD SECTION, WITHOUT ESPLANADES, FITS WITHIN EXISTING 50' RIGHT OF WAY.

CROSS-SECTION AT STATION 0+90

SCALE: 1"=8'



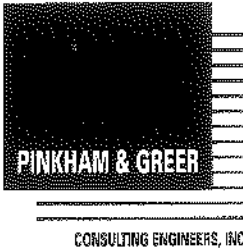


WAIVER REQUEST: NORMAL ROAD SECTION DOES NOT FIT IN EXISTING 50' RIGHT OF WAY.

CROSS-SECTION AT STATION 0+90

SCALE: 1" = 8'

FIGURE 2



**STORMWATER MANAGEMENT REPORT**  
**WYOMING AVENUE**  
**MAY 7, 1999**

***INTRODUCTION:***

This project includes the construction of approximately 400 feet of Wyoming Avenue from Virginia Street to service 6 residential lots. The street will include storm drains, sewer, water and underground electrical service meeting city standards.

The site has a small stream that crosses the property dividing it into two sections. Two of the proposed lots are north of the stream and four lots are south. The road crossing uses a 30" diameter pipe to convey the flow under the road. This stream starts at the outlet of the storm drain from Allen Avenue.

A sewer easement also runs parallel to the stream in an east-west direction from Allen Avenue.

***METHODOLOGY:***

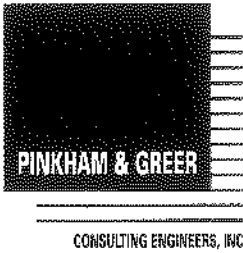
This analysis uses the Soil Conservation Service TR-20 method to predict flows. This method uses hydrologic soil group, vegetative cover and ground slope to establish drainage conditions. The use of a computer model developed by Applied Microcomputer Systems of Chocura, NH, generated the technical data sheets attached.

The peak flows for the storm events of the 2-year, 10-year, and 25-year recurrence rate were used. These are 3.0, 4.7, and 5.5 inches of rain in a 24-hour period.

***SOILS AND TOPOGRAPHY:***

Based on a field review of the area and review of the USGS map, the watershed boundaries were determined. The watershed includes 48 acres west of Allen Avenue. This area includes the fields at Lyseth School and a new residential subdivision. The soils are typical for Portland with silty/clayey soil with shallow to bedrock conditions. A hydrologic group C was selected to model the conditions.

The slope of the watershed is relatively flat at 2.5 to 5.0%. The stream created by the stormdrain outlet, has a 3% slope on the channel bed.



**ANALYSIS:**

The area was modeled using curve numbers for typical urban residential development on C soils. The existing conditions used an average of 1/2-acre lots while the developed conditions used 1/4-acre lots. This changes the curve number from 80 to 83 for the 6 acres below Allen Avenue.

The 30" culvert that crosses Wyoming Avenue creates a natural detention basin up stream of the road. Modeling this area with the culvert in place creates the following peak flows down stream of the project.

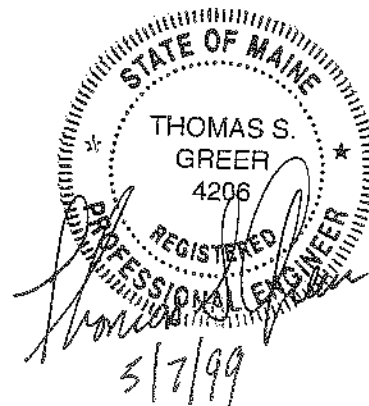
TABLE 1  
PEAK FLOW BELOW WYOMING

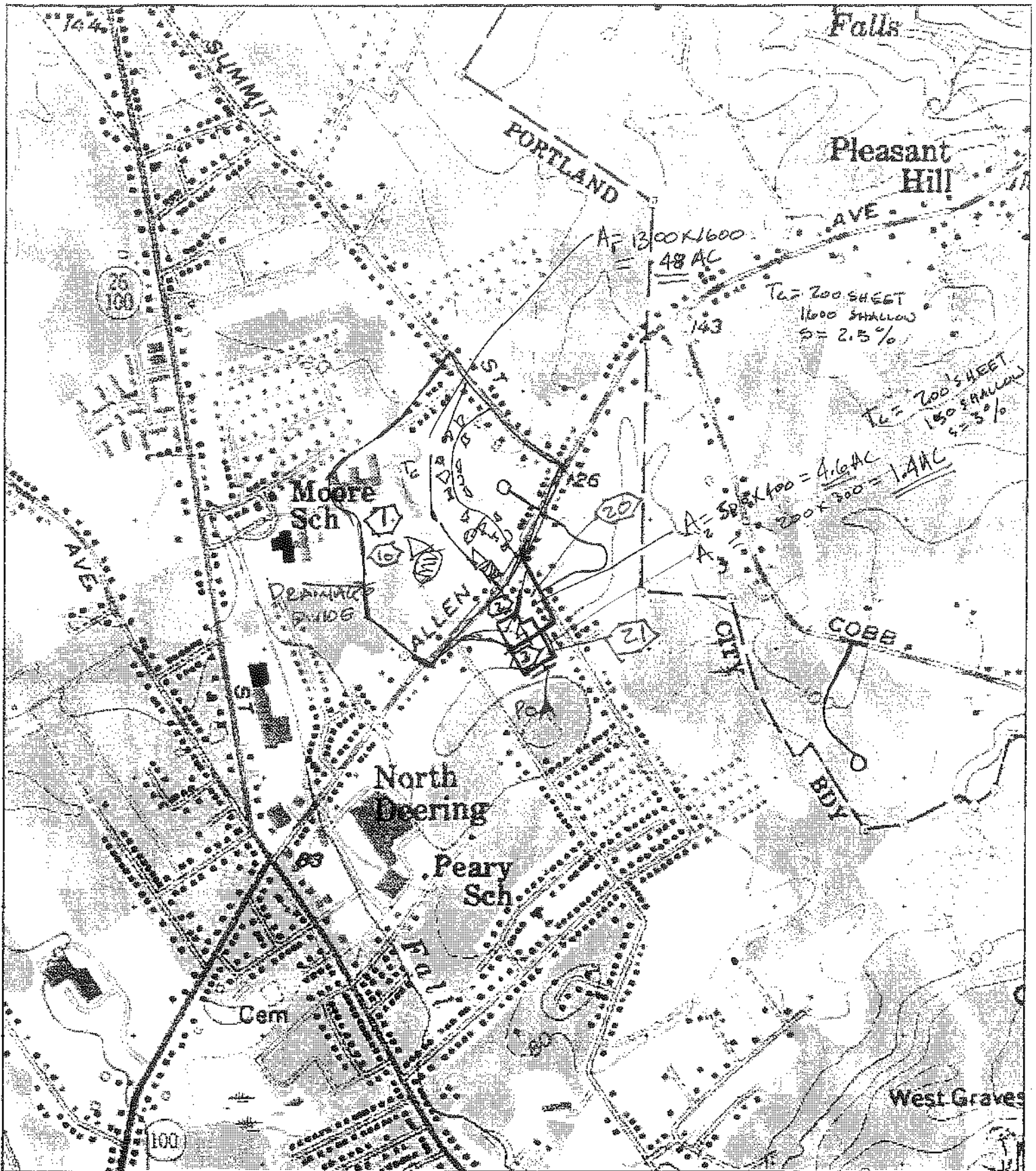
Storm Event	Rain Fall	Pre-Development	Post-Development
		CFS	CFS
2 Years	3.0"	27.94	27.33
10 Years	4.7"	47.05	45.33
25 Years	5.5"	68.49	56.06

There is a slight reduction in peak flows in the 2 and 10-year storms with a significant reduction in the 25-year storm. The 25-year change is due to the design of the Allen Avenue storm drain system. It functions adequately for a 10-year design flow as expected. In higher storms the road over tops increasing the peak flows. Wyoming will detain the flow without overtopping the road in a 25-year storm, which significantly reduces the flows.

**CONCLUSION:**

Based on the reduction in peak flows the project as designed will not have significant drainage impacts on down stream properties.

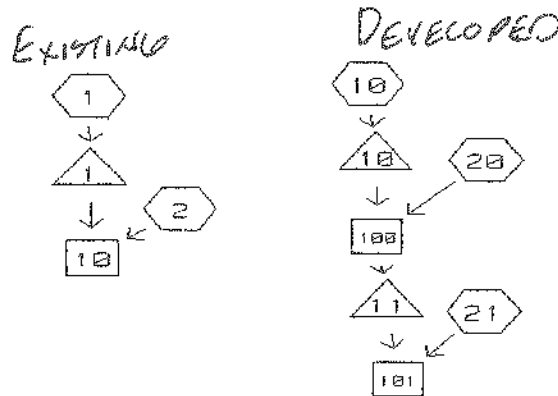




Name: PORTLAND WEST  
 Date: 5/6/99  
 Scale: 1 inch equals 1000 feet

Location: 043° 42' 19.5" N 070° 16' 53.3" W  
 WYOMING AVENUE TSG  
 DRAINAGE PLAN  
 5/7/99

WATERSHED ROUTING =====



SUBCATCHMENT 1	= AREA WEST OF ALLEN AVE	-> POND 1
SUBCATCHMENT 2	= AREA EAST OF ALLEN AVE	-> REACH 10
SUBCATCHMENT 10	= AREA WEST OF ALLEN AVE	-> POND 10
SUBCATCHMENT 20	= AREA ABOVE WYOMING	-> REACH 100
SUBCATCHMENT 21	= AREA DEVELOPED BELOW WYOMING	-> REACH 101
REACH 10	= EXISTING STREAM CANNEL	->
REACH 100	= EXISTING STREAM	-> POND 11
REACH 101	= STREAM BELOW WYOMING	->
POND 1	= STORMDRAIN OUTLET	-> REACH 10
POND 10	= EXISTING STORMDRAIN OUTLET	-> REACH 100
POND 11	= DETENTION ABOVE WYOMING	-> REACH 101

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20 .20	.035	300	.0300	4.7	1.1	27.94
100	-	6.0	4.0	.20 .20	.035	100	.0300	4.7	.4	27.67
101	-	6.0	4.0	.20 .20	.035	125	.0300	4.6	.4	27.33

REDUCED FLOW

IN 2 YEAR STORM.

Data for WYOMING AVE 99122 5/6/99 TSG

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	112.4	.23	26.94	25.69			5	8.6
10	110.0	118.0	112.4	.23	26.94	25.69			5	8.6
11	90.0	98.0	92.6	.19	27.67	27.06			2	7.7

TYPE III 24-HOUR RAINFALL= 3.00 IN

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**SUBCATCHMENT 1                      AREA WEST OF ALLEN AVE**

PEAK= 26.94 CFS @ 12.80 HRS,    VOLUME= 4.52 AF

<u>ACRES</u>	<u>CN</u>			
48.00	80	COMPOSITE URBAN RESIDENTIAL	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	36.0
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.025 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	24.1
Short Grass Pasture	Kv=7    L=1600'    s=.025 '/'	
	V=1.11 fps	
Total Length= 1800 ft		Total Tc= 60.1

**SUBCATCHMENT 2                      AREA EAST OF ALLEN AVE**

PEAK= 4.58 CFS @ 12.45 HRS,    VOLUME= .57 AF

<u>ACRES</u>	<u>CN</u>			
6.00	80	EXISTING RESIDENTIAL AREA	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	33.5
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.03 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	.7
Grassed Waterway	Kv=15    L=150'    s=.05 '/'	
	V=3.35 fps	
Total Length= 350 ft		Total Tc= 34.2

**SUBCATCHMENT 10                    AREA WEST OF ALLEN AVE**

PEAK= 26.94 CFS @ 12.80 HRS,    VOLUME= 4.52 AF

<u>ACRES</u>	<u>CN</u>			
48.00	80	COMPOSITE URBAN RESIDENTIAL	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	36.0
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.025 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	24.1
Short Grass Pasture	Kv=7    L=1600'    s=.025 '/'	
	V=1.11 fps	
Total Length= 1800 ft		Total Tc= 60.1



TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

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**SUBCATCHMENT 20**

**AREA ABOVE WYOMING**

PEAK= 4.09 CFS @ 12.44 HRS, VOLUME= .51 AF

<u>ACRES</u>	<u>CN</u>	
4.60	83	DEVELOPED RESIDENTIAL

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	33.5
Grass: Bermuda n=.41 L=200' P2=3 in s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.1
Short Grass Pasture Kv=7 L=100' s=.05 '/' V=1.57 fps		
Total Length= 300 ft		Total Tc= 34.6

**SUBCATCHMENT 21**

**AREA DEVELOPED BELOW WYOMING**

PEAK= 1.72 CFS @ 12.18 HRS, VOLUME= .16 AF

<u>ACRES</u>	<u>CN</u>	
1.40	83	DEVELOPED RESIDENTIAL

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	15.0
Grass: Bermuda n=.41 L=120' P2=3 in s=.08 '/'		

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

6 May 99

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REACH 10 EXISTING STREAM CANNEL

Qin = 27.99 CFS @ 12.88 HRS, VOLUME= 5.05 AF  
 Qout= 27.94 CFS @ 12.91 HRS, VOLUME= 5.04 AF, ATTEN= 0%, LAG= 1.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.0	0.0	0.00
.4	3.2	10.95
.8	8.0	40.21
1.2	14.4	90.46
1.7	25.1	192.80
2.4	43.2	400.88
3.2	70.4	772.36
4.0	104.0	1302.52

6' x 4' CHANNEL  
 SIDE SLOPE= .2 '/'  
 n= .035  
 LENGTH= 300 FT  
 SLOPE= .03 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= .63 FT  
 PEAK VELOCITY= 4.7 FPS  
 TRAVEL TIME = 1.1 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

REACH 100 EXISTING STREAM

Qin = 27.70 CFS @ 12.89 HRS, VOLUME= 4.99 AF  
 Qout= 27.67 CFS @ 12.90 HRS, VOLUME= 4.98 AF, ATTEN= 0%, LAG= .6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.0	0.0	0.00
.4	3.2	10.95
.8	8.0	40.21
1.2	14.4	90.46
1.7	25.1	192.80
2.4	43.2	400.88
3.2	70.4	772.36
4.0	104.0	1302.52

6' x 4' CHANNEL  
 SIDE SLOPE= .2 '/'  
 n= .035  
 LENGTH= 100 FT  
 SLOPE= .03 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= .63 FT  
 PEAK VELOCITY= 4.7 FPS  
 TRAVEL TIME = .4 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

REACH 101 STREAM BELOW WYOMING

Qin = 27.33 CFS @ 13.02 HRS, VOLUME= 5.11 AF  
 Qout= 27.33 CFS @ 13.03 HRS, VOLUME= 5.11 AF, ATTEN= 0%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.0	0.0	0.00
.4	3.2	10.95
.8	8.0	40.21
1.2	14.4	90.46
1.7	25.1	192.80
2.4	43.2	400.88
3.2	70.4	772.36
4.0	104.0	1302.52

6' x 4' CHANNEL  
 SIDE SLOPE= .2 '/'  
 n= .035  
 LENGTH= 125 FT  
 SLOPE= .03 FT/FT

STOR-IND+TRANS METHOD  
 PEAK DEPTH= .62 FT  
 PEAK VELOCITY= 4.6 FPS  
 TRAVEL TIME = .4 MIN  
 SPAN= 10-20 HRS, dt=.1 HRS

TYPE III 24-HOUR RAINFALL= 3.00 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

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**POND 1 STORMDRAIN OUTLET**

Qin = 26.94 CFS @ 12.80 HRS, VOLUME= 4.52 AF

Qout= 25.69 CFS @ 12.94 HRS, VOLUME= 4.48 AF, ATTEN= 5%, LAG= 8.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	2500	0	0	PEAK STORAGE = 9978 CF
112.0	4500	7000	7000	PEAK ELEVATION= 112.4 FT
114.0	10000	14500	21500	FLOOD ELEVATION= 118.0 FT
116.0	20000	30000	51500	START ELEVATION= 110.0 FT
118.0	25000	45000	96500	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 8.7 MIN (4.43 AF)

# ROUTE	INVERT	OUTLET DEVICES
1	P 110.0'	30" CULVERT n=.023 L=120' S=.025'/1' Ke=.5 Cc=.9 Cd=.6
2	P 116.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

**POND 10 EXISTING STORMDRAIN OUTLET**

Qin = 26.94 CFS @ 12.80 HRS, VOLUME= 4.52 AF

Qout= 25.69 CFS @ 12.94 HRS, VOLUME= 4.48 AF, ATTEN= 5%, LAG= 8.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	2500	0	0	PEAK STORAGE = 9978 CF
112.0	4500	7000	7000	PEAK ELEVATION= 112.4 FT
114.0	10000	14500	21500	FLOOD ELEVATION= 118.0 FT
116.0	20000	30000	51500	START ELEVATION= 110.0 FT
118.0	25000	45000	96500	SPAN= 10-20 HRS, dt=.1 HRS
				Tdet= 8.7 MIN (4.43 AF)

# ROUTE	INVERT	OUTLET DEVICES
1	P 110.0'	30" CULVERT n=.023 L=120' S=.025'/1' Ke=.5 Cc=.9 Cd=.6
2	P 116.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND 11

## DETENTION ABOVE WYOMING

Qin = 27.67 CFS @ 12.90 HRS, VOLUME= 4.98 AF

Qout= 27.06 CFS @ 13.03 HRS, VOLUME= 4.95 AF, ATTEN= 2%, LAG= 7.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
90.0	1200	0	0	PEAK STORAGE = 8142 CF
92.0	4000	5200	5200	PEAK ELEVATION= 92.6 FT
94.0	6500	10500	15700	FLOOD ELEVATION= 98.0 FT
96.0	9600	16100	31800	START ELEVATION= 90.0 FT
98.0	15000	24600	56400	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 6.3 MIN (4.95 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	90.0'	30" CULVERT n=.01 L=75' S=.03'/ ' Ke=.5 Cc=.9 Cd=.6
2	P	97.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

Data for WYOMING AVE 99122 5/6/99 T5G  
 TYPE III 24-HOUR RAINFALL= 4.70 IN  
 Prepared by Pinkham & Greer Consulting Engineers, Inc.  
 HydroCAD 5.01 000465 (c) 1986-1998 Applied Microcomputer Systems

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.  
 RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	48.00	60.1	100%80	80	-	57.99	12.77	9.59
2	6.00	34.2	100%80	80	-	9.81	12.43	1.20
10	48.00	60.1	100%80	80	-	57.99	12.77	9.59
20	4.60	34.6	100%83	83	-	8.25	12.43	1.01
21	1.40	15.0	100%83	83	-	3.45	12.17	.31

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20	.20	.035	300	.0300	5.3	.9	47.05
100	-	6.0	4.0	.20	.20	.035	100	.0300	5.3	.3	46.44
101	-	6.0	4.0	.20	.20	.035	125	.0300	5.2	.4	45.33

REDUCED FLOW  
IN 10 YEAR  
STORM

TYPE III 24-HOUR RAINFALL= 4.70 IN

Prepared by Pinkham & Greer Consulting Engineers, Inc.

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POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	115.6	1.04	57.99	43.73			25	22.7
10	110.0	118.0	115.6	1.04	57.99	43.73			25	22.7
11	90.0	98.0	94.9	.52	46.44	44.95			3	17.9

REDUCED FLOW  
IN 10 YEAR  
STORM.

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	48.00	60.1	100%80	80	-	73.45	12.76	12.12
2	6.00	34.2	100%80	80	-	12.42	12.43	1.52
10	48.00	60.1	100%80	80	-	73.45	12.76	12.12
20	4.60	34.6	100%83	83	-	10.27	12.43	1.26
21	1.40	15.0	100%83	83	-	4.29	12.16	.38



REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20 .20	.035	300	.0300	5.9	.8	68.49
100	-	6.0	4.0	.20 .20	.035	100	.0300	5.9	.3	67.92
101	-	6.0	4.0	.20 .20	.035	125	.0300	5.6	.4	56.06

REDUCED FLOW  
IN 25-YEAR STORM

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.5	1.43	73.45	64.08			13	16.1
10	110.0	118.0	116.5	1.43	73.45	64.08			13	16.1
11	90.0	98.0	96.8	.95	67.92	55.60			18	16.5

# Appendix D: BROAD CRESTED WEIR COEFFICIENTS

WYOMING AVE  
TSC

Note: This table contains *metric* discharge coefficients. To obtain English coefficients multiply the values in this table by 1.81, or use a multiplier of 1.81 in the HydroCAD weir description.

Discharge Coefficients for Broad-Crested Weirs\*

Cross section	Upstream head $h$ (m)							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
1	1.61	1.66	1.93					
2	1.60	1.60	1.90					
3	1.58	1.75	1.79					
4	1.52	1.64	1.77					
5	1.54	1.62	1.69					
6	1.72	1.89	1.98					
7	1.69	1.89	2.00					
8	1.52	1.60	1.93					
9				1.96	1.96	1.97	1.99	2.02
10				1.94	1.92	1.89	1.82	1.97
11				2.12	2.10	2.08	2.06	2.04
12				1.88	1.96	2.01	2.04	2.05
13				1.96	1.96	1.96	1.96	1.96
14				1.89	1.86	1.86	1.85	1.85
15	1.81	2.00						
16	2.10	2.35						
17	1.57	1.73	1.80	1.82	1.83	1.83		
18	1.44	1.46	1.55	1.56	1.69	1.76	1.84	
19	1.43	1.47	1.45	1.46	1.47	1.46	1.48	1.59
20	1.48	1.45	1.44	1.44				
21	1.56	1.50	1.65	1.70	1.74	1.84	1.82	
22	1.56	1.56	1.55	1.55	1.55	1.55	1.54	
23	2.13	2.12	2.13					
24	1.93	1.94	1.94					
25	1.94	1.98	1.97					

\* All dimensions are in meters. Tabulated values represent metric weir coefficients.

Table 9-1 Cont'd

Cross section	Upstream head $h$ (m)							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
26	1.69	1.73	1.73					
27	2.28	2.26	2.06					
28	2.08	2.12	2.12					
29	1.92	1.93	1.92					
30	2.10	2.13	2.13					
31	2.03	2.03	2.01					
32	2.03	2.03	2.01					
33	1.65	1.94	2.10					
34	1.72	1.76	1.76	1.76	1.76	1.76	1.76	
35				1.87	1.84	1.81	1.82	1.82
36				1.91	1.90	1.87	1.84	1.83
37				1.89	1.87	1.87	1.87	1.88
38				1.81	1.81	1.82	1.86	1.90
39				1.82	1.83	1.85	1.87	1.86
40	1.13	1.89	1.90	1.88	1.88	1.90	1.95	2.05
41	1.76	1.92	1.98	2.08	2.04	2.04		
42	1.72	1.90	2.00	2.06	2.10	2.13		
43	1.75	1.84	1.85	1.93	1.97	2.00		
44	1.75	1.81	1.85	1.88	1.90	1.92	1.95	
45	1.80	1.82	1.95	1.94	1.85	1.82		
46	1.94	1.94	1.95	1.92	1.85	1.81	1.79	
47	1.72	1.72	1.70	1.72	1.76	1.79	1.85	
48	1.70	1.71	1.62					
49	2.09							

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# Appendix E: CULVERT ENTRANCE LOSS COEFFICIENTS

Wyoming Ave  
TSCG

Entrance Loss Coefficients.

Type of Structure and Design of Entrance	Coefficient, $k_e$
<b>Pipe, Concrete</b>	
Projecting from fill, groove end . . . . .	0.2
Projecting from fill, sq. cut end . . . . .	0.5
Headwall or headwall and wingwalls	
Groove end of pipe . . . . .	0.2
Square-edge . . . . .	0.5
Rounded (radius = 1/12D) . . . . .	0.1
Mitered to conform to fill slope . . . . .	0.7
End-Section conforming to fill slope* . . . . .	0.5
<b>Pipe, or Pipe-Arch, Corrugated Metal</b>	
Projecting from fill (no headwall) . . . . .	0.9
Headwall or headwall end wingwalls	
Square-edge . . . . .	0.5
Mitered to conform to fill slope . . . . .	0.7
End-Section conforming to fill slope* . . . . .	0.5
<b>Box, Reinforced Concrete</b>	
Headwall parallel to embankment (no wingwalls)	
Square-edged on 3 edges . . . . .	0.5
Rounded on 3 edges to radius of 1/12 barrel dimension . . . . .	0.2
Wingwalls at 30° to 75° to barrel	
Square-edged at crown . . . . .	0.4
Crown edge rounded to radius of 1/12 barrel dimension . . . . .	0.2
Wingwalls at 10° to 30° to barrel	
Square-edged at crown . . . . .	0.5
Wingwalls parallel (extension of sides)	
Square-edged at crown . . . . .	0.7

\*Note: "End Section conforming to fill slope", made of either metal or concrete, are the sections commonly available from manufacturers. From limited hydraulic tests they are equivalent in operation to a headwall in both inlet and outlet control. Some end sections, incorporating a closed taper have a superior hydraulic performance.

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WYOMING AVE.  
TSCG

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage <100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rills or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.150
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage >100 ft). The $n$ value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

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Wyoming Ave  
5/7/99  
TSG

8. Stormwater calculation model.

1. One day precipitation values. Values to be used in preparation of the TR-20 or TR-55 study. (Revised April 16, 1992)

S&WCD Number, Field Office and S&WCD Location	Rainfall Frequency 24-hour Duration					
	2 yr	5 yr	10 yr	25 yr	50 yr	100 yr
1. Fort Kent - St. John Valley	2.0	3.0	3.5	4.0	4.4	4.8
2. Presque Isle - Central Aroostook	2.4	3.2	3.6	4.2	4.6	5.0
3. Houlton - Southern Aroostook	2.5	3.3	3.8	4.4	4.8	5.3
4. Sanford - York County	2.5	4.0	4.6	5.4	6.0	6.6
5. Dover-Foxcroft - Piscataquis County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.6	3.4	4.0	4.6	5.0	5.5
6. Belfast - Waldo County	2.5	3.7	4.3	4.9	5.5	6.0
7. Bangor - Penobscot County						
- North of CPR	2.5	3.3	3.8	4.4	4.9	5.4
- South of CPR	2.7	3.5	4.1	4.8	5.3	5.8
8. Skowhegan - Somerset County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.7	3.5	4.1	4.7	5.2	5.7
9. Portland - Cumberland County						
- Northwest of Route 11	3.3	4.3	5.0	5.8	6.4	7.9
- Southeast of Route 11	3.0	4.0	4.7	5.5	6.0	6.7
10. South Paris - Oxford County						
- West of Route 26	3.5	4.5	5.2	6.0	6.5	7.1
- East of Route 26	3.0	4.0	4.6	5.3	5.8	6.4
11. Augusta - Kennebec County	3.0	3.8	4.4	5.1	5.6	6.1
12. Rockland - Knox - Lincoln County	2.9	3.8	4.4	5.1	5.6	6.2
13. Auburn - Androscoggin Valley	3.0	3.9	4.6	5.4	5.9	6.5
14. Farmington - Franklin County	2.9	3.7	4.2	4.9	5.4	5.9
15. Machias - Washington County	2.5	3.4	4.0	4.8	5.3	5.9
16. Ellsworth - Hancock County	2.7	3.6	4.2	4.9	5.4	6.0

# Appendix A: RUNOFF CURVE NUMBERS

Runoff curve numbers for urban areas<sup>1</sup>

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area <sup>2</sup>	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3</sup> :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	59	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)					
		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)					
		98	98	98	98
Paved; open ditches (including right-of-way)					
		83	89	92	93
Gravel (including right-of-way)					
		76	85	89	91
Dirt (including right-of-way)					
		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup> ...					
		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)					
		96	96	96	96
Urban districts:					
Commercial and business					
	85	89	92	94	95
Industrial					
	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)					
	65	77	85	90	92
1/4 acre					
	38	61	75	83	87
1/3 acre					
	30	57	72	81	86
1/2 acre					
	25	54	70	80	85
1 acre					
	20	51	68	79	84
2 acres					
	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup>					
		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c)					

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup>The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

TYPE III 24-HOUR RAINFALL= 3.00 IN

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6 May 99

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REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20 .20	.035	300	.0300	4.7	1.1	27.94
100	-	6.0	4.0	.20 .20	.035	100	.0300	4.7	.4	27.67
101	-	6.0	4.0	.20 .20	.035	125	.0300	4.6	.4	27.33

REDUCED FLOW  
IN 2 YEAR STORM.



Data for WYOMING AVE 99122 5/6/99 TSG

TYPE III 24-HOUR RAINFALL= 3.00 IN

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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW			Qsec (CFS)	---Qout--- ATTEN. (%)	LAG (MIN)
					Qin (CFS)	Qout (CFS)	Qpri (CFS)			
1	110.0	118.0	112.4	.23	26.94	25.69			5	8.6
10	110.0	118.0	112.4	.23	26.94	25.69			5	8.6
11	90.0	98.0	92.6	.19	27.67	27.06			2	7.7

TYPE III 24-HOUR RAINFALL= 3.00 IN

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**SUBCATCHMENT 1                      AREA WEST OF ALLEN AVE**

PEAK= 26.94 CFS @ 12.80 HRS,    VOLUME= 4.52 AF

<u>ACRES</u>	<u>CN</u>			
48.00	80	COMPOSITE URBAN RESIDENTIAL	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

<u>Method</u>	<u>Comment</u>	<u>Tc (min)</u>
TR-55 SHEET FLOW	SHEET	36.0
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.025 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	24.1
Short Grass Pasture	Kv=7    L=1600'    s=.025 '/'	
	V=1.11 fps	
Total Length= 1800 ft		Total Tc= 60.1

**SUBCATCHMENT 2                      AREA EAST OF ALLEN AVE**

PEAK= 4.58 CFS @ 12.45 HRS,    VOLUME= .57 AF

<u>ACRES</u>	<u>CN</u>			
6.00	80	EXISTING RESIDENTIAL AREA	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

<u>Method</u>	<u>Comment</u>	<u>Tc (min)</u>
TR-55 SHEET FLOW	SHEET	33.5
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.03 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	.7
Grassed Waterway	Kv=15    L=150'    s=.05 '/'	
	V=3.35 fps	
Total Length= 350 ft		Total Tc= 34.2

**SUBCATCHMENT 10                    AREA WEST OF ALLEN AVE**

PEAK= 26.94 CFS @ 12.80 HRS,    VOLUME= 4.52 AF

<u>ACRES</u>	<u>CN</u>			
48.00	80	COMPOSITE URBAN RESIDENTIAL	SCS TR-20 METHOD	
			TYPE III 24-HOUR	
			RAINFALL= 3.00 IN	
			SPAN= 10-20 HRS, dt=.1 HRS	

<u>Method</u>	<u>Comment</u>	<u>Tc (min)</u>
TR-55 SHEET FLOW	SHEET	36.0
Grass: Bermuda	n=.41    L=200'    P2=3 in    s=.025 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	24.1
Short Grass Pasture	Kv=7    L=1600'    s=.025 '/'	
	V=1.11 fps	
Total Length= 1800 ft		Total Tc= 60.1

TYPE III 24-HOUR RAINFALL= 3.00 IN

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**SUBCATCHMENT 20                      AREA ABOVE WYOMING**

PEAK= 4.09 CFS @ 12.44 HRS,    VOLUME= .51 AF

ACRES	CN	
4.60	83	DEVELOPED RESIDENTIAL

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	33.5
Grass: Bermuda    n=.41    L=200'    P2=3 in    s=.03 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	SHALLOW	1.1
Short Grass Pasture    Kv=7    L=100'    s=.05 '/'	V=1.57 fps	
Total Length= 300 ft		Total Tc= 34.6

**SUBCATCHMENT 21                      AREA DEVELOPED BELOW WYOMING**

PEAK= 1.72 CFS @ 12.18 HRS,    VOLUME= .16 AF

ACRES	CN	
1.40	83	DEVELOPED RESIDENTIAL

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.00 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	SHEET	15.0
Grass: Bermuda    n=.41    L=120'    P2=3 in    s=.08 '/'		



**POND 1 STORMDRAIN OUTLET**

Qin = 26.94 CFS @ 12.80 HRS, VOLUME= 4.52 AF  
 Qout= 25.69 CFS @ 12.94 HRS, VOLUME= 4.48 AF, ATTEN= 5%, LAG= 8.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	2500	0	0	PEAK STORAGE = 9978 CF
112.0	4500	7000	7000	PEAK ELEVATION= 112.4 FT
114.0	10000	14500	21500	FLOOD ELEVATION= 118.0 FT
116.0	20000	30000	51500	START ELEVATION= 110.0 FT
118.0	25000	45000	96500	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 8.7 MIN (4.43 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.023 L=120' S=.025'/' Ke=.5 Cc=.9 Cd=.6
2	P	116.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

**POND 10 EXISTING STORMDRAIN OUTLET**

Qin = 26.94 CFS @ 12.80 HRS, VOLUME= 4.52 AF  
 Qout= 25.69 CFS @ 12.94 HRS, VOLUME= 4.48 AF, ATTEN= 5%, LAG= 8.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
110.0	2500	0	0	PEAK STORAGE = 9978 CF
112.0	4500	7000	7000	PEAK ELEVATION= 112.4 FT
114.0	10000	14500	21500	FLOOD ELEVATION= 118.0 FT
116.0	20000	30000	51500	START ELEVATION= 110.0 FT
118.0	25000	45000	96500	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 8.7 MIN (4.43 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	110.0'	30" CULVERT n=.023 L=120' S=.025'/' Ke=.5 Cc=.9 Cd=.6
2	P	116.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

TYPE III 24-HOUR RAINFALL= 3.00 IN

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POND 11

DETENTION ABOVE WYOMING

Qin = 27.67 CFS @ 12.90 HRS, VOLUME= 4.98 AF  
 Qout= 27.06 CFS @ 13.03 HRS, VOLUME= 4.95 AF, ATTEN= 2%, LAG= 7.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
90.0	1200	0	0	PEAK STORAGE = 8142 CF
92.0	4000	5200	5200	PEAK ELEVATION= 92.6 FT
94.0	6500	10500	15700	FLOOD ELEVATION= 98.0 FT
96.0	9600	16100	31800	START ELEVATION= 90.0 FT
98.0	15000	24600	56400	SPAN= 10-20 HRS, dt=.1 HRS Tdet= 6.3 MIN (4.95 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	90.0'	30" CULVERT n=.01 L=75' S=.03'/1' Ke=.5 Cc=.9 Cd=.6
2	P	97.0'	20' BROAD-CRESTED RECTANGULAR WEIR X 1.81 Q=C L H <sup>1.5</sup> C=1.43, 1.45, 1.47, 0, 0, 0, 0, 0

Data for WYOMING AVE 99122 5/6/99 TSG

TYPE III 24-HOUR RAINFALL= 4.70 IN

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RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 4.70 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	48.00	60.1	100%80	80	-	57.99	12.77	9.59
2	6.00	34.2	100%80	80	-	9.81	12.43	1.20
10	48.00	60.1	100%80	80	-	57.99	12.77	9.59
20	4.60	34.6	100%83	83	-	8.25	12.43	1.01
21	1.40	15.0	100%83	83	-	3.45	12.17	.31

TYPE III 24-HOUR RAINFALL= 4.70 IN

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20 .20	.035	300	.0300	5.3	.9	47.05
100	-	6.0	4.0	.20 .20	.035	100	.0300	5.3	.3	46.44
101	-	6.0	4.0	.20 .20	.035	125	.0300	5.2	.4	45.33

REDUCED FLOW  
IN 10 YEAR  
STORM



TYPE III 24-HOUR RAINFALL= 4.70 IN

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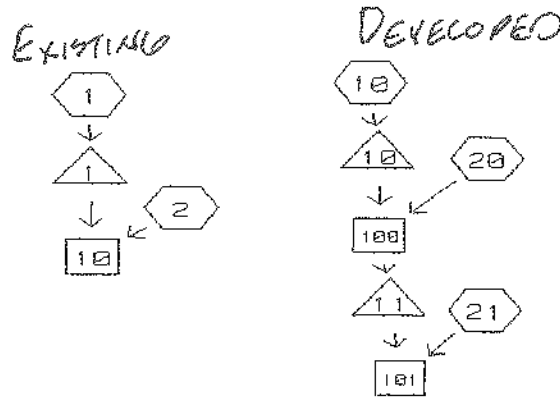
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## POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	----- PEAK FLOW -----				---Qout---	
					Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	115.6	1.04	57.99	43.73			25	22.7
10	110.0	118.0	115.6	1.04	57.99	43.73			25	22.7
11	90.0	98.0	94.9	.52	46.44	44.95			3	17.9

REDUCED FLOW  
IN 10 YEAR  
STORM.

WATERSHED ROUTING =====



SUBCATCHMENT 1	= AREA WEST OF ALLEN AVE	-> POND 1
SUBCATCHMENT 2	= AREA EAST OF ALLEN AVE	-> REACH 10
SUBCATCHMENT 10	= AREA WEST OF ALLEN AVE	-> POND 10
SUBCATCHMENT 20	= AREA ABOVE WYOMING	-> REACH 100
SUBCATCHMENT 21	= AREA DEVELOPED BELOW WYOMING	-> REACH 101
REACH 10	= EXISTING STREAM CANNEL	->
REACH 100	= EXISTING STREAM	-> POND 11
REACH 101	= STREAM BELOW WYOMING	->
POND 1	= STORMDRAIN OUTLET	-> REACH 10
POND 10	= EXISTING STORMDRAIN OUTLET	-> REACH 100
POND 11	= DETENTION ABOVE WYOMING	-> REACH 101

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

HydroCAD 5.01 000465 (c) 1986-1998 Applied Microcomputer Systems

RUNOFF BY SCS TR-20 METHOD: TYPE III 24-HOUR RAINFALL= 5.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	48.00	60.1	100%80	80	-	73.45	12.76	12.12
2	6.00	34.2	100%80	80	-	12.42	12.43	1.52
10	48.00	60.1	100%80	80	-	73.45	12.76	12.12
20	4.60	34.6	100%83	83	-	10.27	12.43	1.26
21	1.40	15.0	100%83	83	-	4.29	12.16	.38

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

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## REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)	n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
10	-	6.0	4.0	.20 .20	.035	300	.0300	5.9	.8	68.49
100	-	6.0	4.0	.20 .20	.035	100	.0300	5.9	.3	67.92
101	-	6.0	4.0	.20 .20	.035	125	.0300	5.6	.4	56.06

REDUCED FLOW  
IN 25-YEAR STORM

TYPE III 24-HOUR RAINFALL= 5.50 IN

Prepared by Pinkham &amp; Greer Consulting Engineers, Inc.

6 May 99

HydroCAD 5.01 000465 (c) 1986-1998 Applied Microcomputer Systems

## POND ROUTING BY STOR-IND METHOD

POND NO.	START	FLOOD	PEAK	PEAK	----- PEAK FLOW -----				---Qout---	
	ELEV. (FT)	ELEV. (FT)	ELEV. (FT)	STORAGE (AF)	Qin (CFS)	Qout (CFS)	Qpri (CFS)	Qsec (CFS)	ATTEN. (%)	LAG (MIN)
1	110.0	118.0	116.5	1.43	73.45	64.08			13	16.1
10	110.0	118.0	116.5	1.43	73.45	64.08			13	16.1
11	90.0	98.0	96.8	.96	67.92	55.60			18	16.5

# Appendix D: BROAD CRESTED WEIR COEFFICIENTS

WYOMING AVE  
TSCG

Note: This table contains *metric* discharge coefficients. To obtain English coefficients multiply the values in this table by 1.81, or use a multiplier of 1.81 in the HydroCAD weir description.

Discharge Coefficients for Broad-Crested Weirs\*

Cross section	Upstream head $h$ [m]							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
1		1.61	1.86	1.98				
2		1.60	1.80	1.80				
3		1.50	1.75	1.79				
4		1.53	1.64	1.77				
5		1.54	1.62	1.69				
6		1.72	1.88	1.98				
7		1.65	1.86	2.00				
8		1.53	1.80	1.93				
9				1.96	1.96	1.97	1.99	2.02
10				1.94	1.97	1.99	1.92	1.97
11		2.12	2.10	2.08	2.08	2.06	2.04	2.00
12		1.88	1.96	2.01	2.04	2.05	2.05	2.05
13				1.96	1.96	1.96	1.96	1.96
14				1.86	1.86	1.86	1.86	1.86
15		1.81	2.00					
16		2.10	2.35					
17		1.57	1.73	1.80	1.82	1.83	1.83	
18		1.44	1.46	1.55	1.58	1.68	1.76	1.84
19		1.43	1.47	1.45	1.46	1.47	1.46	1.59
20		1.48	1.45	1.44	1.44			
21		1.56	1.60	1.65	1.70	1.74	1.84	1.82
22		1.56	1.56	1.55	1.55	1.55	1.55	1.54
23		2.13	2.13	2.13				
24		1.93	1.94	1.94				
25		1.94	1.98	1.97				

\*All dimensions are in meters. Tabulated values represent metric weir coefficients.

Table 9-1 Cont'd

Cross section	Upstream head $h$ [m]							
	0.15	0.30	0.45	0.60	0.75	0.90	1.20	1.50
26		1.69	1.73	1.73				
27		2.28	2.25	2.06				
28		2.08	2.12	2.12				
29		1.92	1.93	1.92				
30		2.10	2.13	2.13				
31		2.03	2.03	2.01				
32		2.03	2.03	2.01				
33		1.65	1.94	2.10				
34		1.72	1.76	1.76	1.76	1.76	1.76	1.76
35			1.87	1.84	1.81	1.82	1.82	1.85
36		1.91	1.90	1.87	1.84	1.80	1.86	1.90
37					1.89	1.87	1.87	1.88
38		1.81	1.81	1.82	1.86	1.90	1.97	2.01
39		1.13	1.89	1.90	1.88	1.80	1.90	
40		1.76	1.92	1.98	2.06	2.04	2.04	2.11
41		1.72	1.90	2.00	2.06	2.10	2.13	
42		1.78	1.84	1.89	1.93	1.97	2.00	
43		1.75	1.81	1.85	1.88	1.90	1.92	1.95
44		1.80	1.92	1.95	1.94	1.95	1.82	
45		1.94	1.94	1.95	1.92	1.85	1.81	1.79
46		1.72	1.72	1.70	1.72	1.76	1.79	1.85
47		1.70	1.71	1.82				
48		2.09						

Appendix E: CULVERT ENTRANCE LOSS COEFFICIENTS

WYOMING AVE  
TSCA

Entrance Loss Coefficients.

Type of Structure and Design of Entrance	Coefficient $k_e$
<b>Pipe, Concrete</b>	
Projecting from fill, groove end . . . . .	0.2
Projecting from fill, sq. cut end . . . . .	0.5
Headwall or headwall and wingwalls	
Groove end of pipe . . . . .	0.2
Square-edge . . . . .	0.5
Rounded (radius = 1/12D) . . . . .	0.1
Mitered to conform to fill slope . . . . .	0.7
End-Section conforming to fill slope* . . . . .	0.5
<b>Pipe, or Pipe-Arch, Corrugated Metal</b>	
Projecting from fill (no headwall) . . . . .	0.9
Headwall or headwall end wingwalls	
Square-edge . . . . .	0.5
Mitered to conform to fill slope . . . . .	0.7
End-Section conforming to fill slope* . . . . .	0.5
<b>Box, Reinforced Concrete</b>	
Headwall parallel to embankment (no wingwalls)	
Square-edged on 3 edges . . . . .	0.5
Rounded on 3 edges to radius of 1/12 barrel dimension . . . . .	0.2
Wingwalls at 30° to 75° to barrel	
Square-edged at crown . . . . .	0.4
Crown edge rounded to radius of 1/12 barrel dimension . . . . .	0.2
Wingwalls at 10° to 30° to barrel	
Square-edged at crown . . . . .	0.5
Wingwalls parallel (extension of sides)	
Square-edged at crown . . . . .	0.7

\*Note: "End Section conforming to fill slope", made of either metal or concrete, are the sections commonly available from manufacturers. From limited hydraulic tests they are equivalent in operation to a headwall in both inlet and outlet control. Some end sections, incorporating a closed taper have a superior hydraulic performance.

WYOMING AVE.  
RSG

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.060
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage <100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clear, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT n (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage >100 ft). The n value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.035	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

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Wyoming Ave

5/7/99

TSG

B. Stormwater calculation model.

1. One day precipitation values. Values to be used in preparation of the TR-20 or TR-55 study. (Revised April 16, 1992)

S&WCD Number, Field Office and S&WCD Location	Rainfall Frequency 24-hour Duration					
	2 yr	5 yr	10 yr	25 yr	50 yr	100 yr
1. Fort Kent - St. John Valley	2.0	3.0	3.8	4.0	4.4	4.8
2. Presque Isle - Central Aroostook	2.4	3.2	3.6	4.2	4.6	5.0
3. Houlton - Southern Aroostook	2.5	3.3	3.8	4.4	4.8	5.3
4. Sanford - York County	2.5	4.0	4.6	5.4	6.0	6.6
5. Dover-Foxcroft - Piscataquis County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.6	3.4	4.0	4.6	5.0	5.5
6. Belfast - Waldo County	2.5	3.7	4.3	4.9	5.5	6.0
7. Bangor - Penobscot County						
- North of CPR	2.5	3.3	3.8	4.4	4.9	5.4
- South of CPR	2.7	3.5	4.1	4.8	5.3	5.8
8. Skowhegan - Somerset County						
- North of CPR	2.5	3.3	3.8	4.4	4.8	5.3
- South of CPR	2.7	3.5	4.1	4.7	5.2	5.7
9. Portland - Cumberland County						
- Northwest of Route 11	3.3	4.3	5.0	5.8	6.4	7.9
- Southeast of Route 11	3.0	4.0	4.7	5.5	6.0	6.7
10. South Paris - Oxford County						
- West of Route 26	3.5	4.5	5.2	6.0	6.5	7.1
- East of Route 26	3.0	4.0	4.6	5.2	5.9	6.4
11. Augusta - Kennebec County	3.0	3.8	4.4	5.1	5.6	6.1
12. Rockland - Knox - Lincoln County	2.9	3.8	4.4	5.1	5.6	6.2
13. Auburn - Androscoggin Valley	3.0	3.9	4.6	5.4	5.9	6.5
14. Farmington - Franklin County	2.9	3.7	4.2	4.9	5.4	5.9
15. Machias - Washington County	2.5	3.4	4.0	4.8	5.3	5.9
16. Ellsworth - Hancock County	2.7	3.6	4.2	4.9	5.4	6.0

# Appendix A: RUNOFF CURVE NUMBERS

Runoff curve numbers for urban areas<sup>1</sup>

Cover description	Average percent impervious area <sup>2</sup>	Curve numbers for hydrologic soil group—			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3</sup> :					
Poor condition (grass cover < 50%) .....		68	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....		98	98	98	98
Paved; open ditches (including right-of-way) .....		83	89	92	93
Gravel (including right-of-way) .....		76	85	89	91
Dirt (including right-of-way) .....		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4</sup> ...		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	61	75	83	87
1/3 acre .....	30	57	72	81	86
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup>Average runoff condition, and  $I_a = 0.2S$ .

<sup>2</sup>The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Hopkinson & Abbondanza, P.A.

Telephone (207) 772-5545  
Facsimile (207) 874-2339

511 Congress Street  
Suite 801  
Portland, Maine 04101

James A. Hopkinson  
Richard J. Abbondanza  
Frank K. Chokaty

Post-It® Fax Note	7871	Date	5-6-99	# of pages	2
To	KANDICE TALBOT				
From	GAB + FAV				
Co./Dept.					
Phone #	772-2127				
Fax #	756-8258				

May 6, 1999

VIA FAX 871-8695

Amy K. Mulken  
Greg McCormack  
426 Forest Avenue  
Portland, Maine 04101

RE: The Pines of Portland

Dear Amy & Greg:

This letter follows up our discussions on May 3, 1999 regarding property you own located in The Pines Subdivision in Portland, Maine. You own approximately 20 acres of land that is made up of numerous lots, many of which are as small as 30' x 100' in size, in The Pines Subdivision as shown on a Plan recorded in the Cumberland County Registry of Deeds in Plan Book 17, Page 6. These lots are located on and abut various paper streets and street access to these paper streets is subject to the provisions of Section 14-403 of the Portland Land Use Code. You have previously received staff approval to improve certain portions of these paper streets in order to provide physical access to various lots and to sell these lots to the general public for single family residential purposes. In order to meet the minimum lot size requirements under the Portland Zoning Ordinance, you are selling various subdivision lots on these roads in groups that meet or exceed the minimum lot size requirements. In so doing, you are not adjusting any of the lot boundary lines as shown on the original subdivision plans for The Pines as recorded in the Cumberland County Registry of Deeds. Accordingly, you are not subdividing or resubdividing any portions of the property which you own in the area.

You have inquired as to whether use of lots on the subdivision for road and access purposes would be permitted. Specifically you have asked whether I would review the Portland Subdivision Ordinance to determine whether joining these 30' wide lots together into a 60' wide lot and using the 60' lot as a 60' roadway would be a violation of the subdivision ordinance as provided under the Portland Code. We have reviewed the Portland Code and have determined that such use of lots, which lots are shown on the recorded subdivision plan for The Pines, would not result in a violation of the Portland Subdivision Ordinance. As you know, the definition of a

subdivision under the ordinance is the division of a lot, tract or parcel of land into three or more lots. Your proposal does not include or anticipate adjusting any lot lines as shown on the subdivision plan recorded in Plan Book 17, Pages 6 & 7. Accordingly, you are not dividing any of the lots. The Portland Ordinance does specifically incorporate by reference the provisions of 30-A M.R.S.A. Section 4401, which is specifically made not applicable to subdivision plans legally recorded the proper Registry of Deeds before September 23, 1971. Accordingly, the Subdivision Ordinance, by definition does not apply to The Pines Subdivision. Since you are not adjusting any boundary lines in using the applicable lots for roadway purposes, you are not further subdividing the land. Since your use of the lots that you own in The Pines Subdivision will continue to be for single-family residential purposes and since these proposed roads will be used only to access lots that will be sold in groups (again continuing to honor the original subdivision lot lines) that will meet minimum lot size requirements, we see no violation of the Portland Subdivision Ordinance and we see that you continue to be properly authorized under Section 14-403 to use any of the paper streets shown on The Pines Subdivision as access to your lots as well.

As an aside, I have contacted your Engineer, Tom Greer of Pinkham & Greer Consulting Engineers, and have asked him whether there are any design issues in constructing the road over these lots as you propose. Tom has advised me that he sees no design issues under the Portland Ordinance for locating the road as you proposed.

Based upon the foregoing, it is my conclusion that your proposed road or roads will need only planning staff review and approval from the City of Portland.

Please let me know whether you have any further questions or concerns regarding this matter.

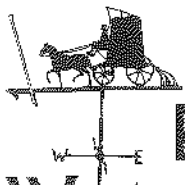
Very truly,



James A. Hopkinson

JAH:mb

NOTE



# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

April 26, 1999

Greg McCormack  
A & G Associates  
426 Forest Ave  
Portland, Me 04101

Re: Water main extension- Wyoming Ave

Dear Greg,

This letter is to confirm there should be an adequate supply of clean and healthful water to serve the needs of the proposed six lot sub-division located at Wyoming Ave in Portland. Checking District records, I find the nearest water main is in Virginia St. In order to serve the project, it will require a 8" water main extension in Wyoming Ave. from Virginia St.

The current data from the nearest hydrant indicates there should be adequate capacity of water.

Virginia @Illinois Ave  
Hydrant # 1387  
Static pressure = 66 PSI  
Flow = 1113GPM  
Last Tested = 5/24/93

If the district can be of further assistance in this matter, please let us know.

Sincerely,  
Portland Water District

Jim Pandiscio  
Means Coordinator

CROSS-SECTION AT STATION 0+90

WAIVER REQUEST: NORMAL ROAD SECTION DOES NOT FIT IN EXISTING 50' RIGHT OF WAY.

SCALE: 1" = 8'

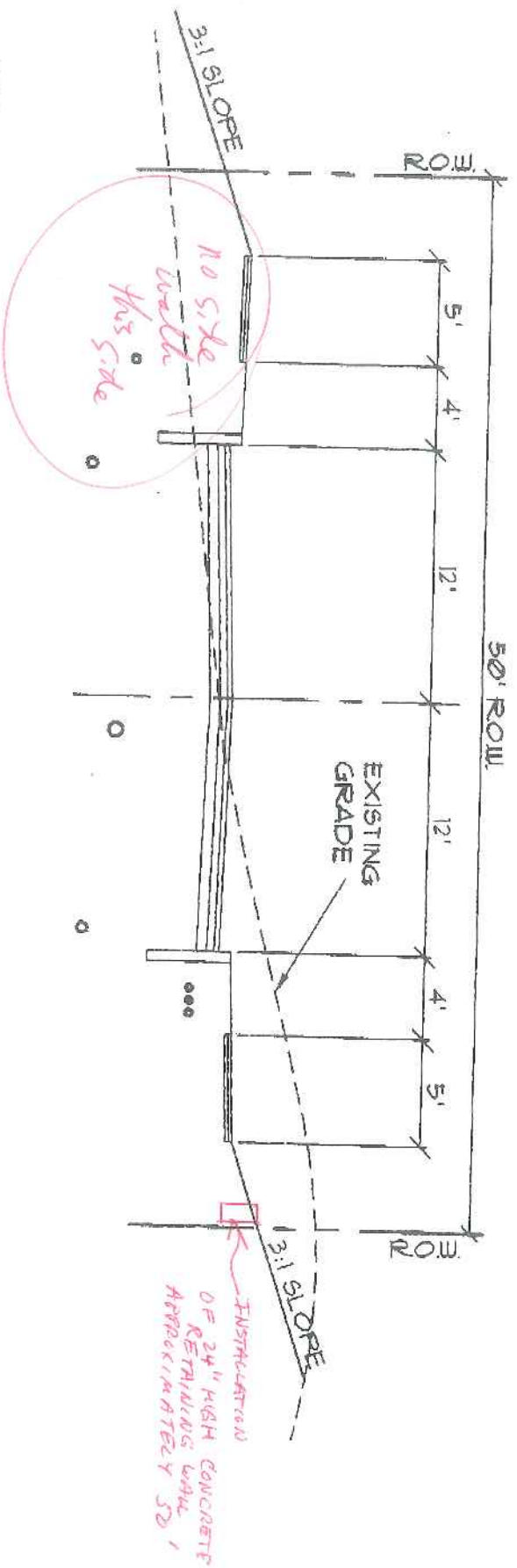


FIGURE 2



MULKERIN ASSOCIATES  
REAL ESTATE

- Need original Subdivision plan
- Tier 1 - Army Corp. <sup>Permit</sup> Application & Approval
- Who is Pines of Portland Inc.?
- Deed to Roadway Right, title + interest

April 9, 1999

To: City of Portland  
From: Pines of Portland, Inc.  
426 Forest Avenue Portland, ME 04101  
Amy Mulkerin  
Greg McCormack  
Re: Wyoming Avenue Extension of paper street

#### Site Plan Application Statements

- 1.) Estimated cost of road extension : \$102,000.00  
(Tony Lombardo, City Engineer, makes up his own cost estimate)
- 2.) Approximately 340' road to be constructed to City standards for servicing (6) single family homes.
- 3.) Total land area including right of way is approximately 112,500 s.f. Each site will have a building footprint of about 1200 s.f.
- 4.) Standard utility easements will be issued. Currently exists 30' sewer easement as shown on plan.
- 5.) Solid waste generated will be typical of single family homes.
- 6.) All required utilities are available including, sewer, water, electric, telephone and cable T.V.
- 7.) Currently exists drainage from 36" culvert upslope which will be continued by construction of culvert under road as shown on plan. Surface water will be controlled as shown on plan.
- 8.) Construction plan is shown on detail map prepared by Pinkham and Greer Engineers.
- 9.) D.E.P. permit by rule for stream crossing expected by week of April 12<sup>th</sup>
- 10.) Road construction costs will be paid from corporation resources or line of credit from Maine Bank and Trust.
- 11.) Deed to property enclosed.
- 12.) No unusual wildlife habitats or archaeological areas exist on the site or near the project.

Sincerely,

Gregory T. McCormack  
Pines of Portland, Inc.

~~TO: Tom Green~~ TO: KANDI

FROM: GREG MCCORMACK

**PUBLIC WORKS ENGINEERING**  
**MEMORANDUM**

To: Kandi Talbot, Planner

From: Anthony Lombardo, P.E., Project Engineer

Date: May 18, 1999

Subject: Wyoming Avenue Subdivision....A & G Associates.

The following comments were generated during Public Works Engineering second review of proposed development of Wyoming Avenue, westerly off Virginia Street. The plans submitted are dated May 7, 1999 and received on May 11, 1999.

- ✓ • As part of the requirements for the development of 14-403 Streets, the applicant must submit the plans and supporting materials required under Article IV-Subdivisions...in Chapter 14, Land Use Regulations of the City Ordinance. Therefore, the applicant still needs to submit a "Standard Boundary Plan" which specifies the complete limits of this development and is prepared and stamped by a professional licensed surveyor.
- ✓ • The applicant must still provide evidence of DEP and/or Army Corp of Engineers permit applications and approvals for the proposed culvert crossing and wetland filling.
- ✓ • Applicant must still provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.
- ✓ • The applicant has requested an esplanade waiver and waiver of sidewalks on both sides of the streets. Public Works does not object to the construction of a sidewalk on only one side of the street. We would prefer construction of this sidewalk on the northerly side of Wyoming Ave. Public Works is, however, requiring the applicant to also include a four (4) feet wide vegetated esplanade on northerly side of Wyoming. The applicant will have to identify areas needing slope stabilization where cut slopes exceed 2:1 and where fill slopes exceed 3:1.

See enclosed

Cross-section Figure 2

All Above  
Enclosed

Letter re financial capability enclosed



November 1, 1999

Amy Mulkerin  
Greg McCormack  
The Pines of Portland, Inc.  
426 Forest Avenue  
Portland, ME 04101

re: The Pines Subdivision

Dear Ms. Mulkerin & Mr. McCormack:

On October 12, 1999 the Portland Planning Board voted 5-0 (Cole and Krichels absent) on the following motions regarding The Pines Subdivision:

1. That the plan was in conformance with the Subdivision Review Ordinance of the City Land Use Code which constitutes stormwater permit under City delegated authority with the following condition(s):
  - i. that the note which states "street frontage variance received" must be removed from all subdivision plats
  - ii. the developer shall place \$15,000 in an interest bearing escrow account to be maintained by the City of Portland. These monies shall be deposited with the City prior to release and recording of Section I of the Subdivision Plat and shall remain for a period of five (5) years from the completion of all public improvements or the completion of seventy-five (75%) of all house lots in the approved subdivision, whichever occurs later. The escrow money shall be accessed by the City, after notice to the developer and a reasonable time to cure, if or when necessary to correct any on- or off-site improvements needed to resolve drainage problems associated with, or attributable to, the project. Determination of the appropriate use of said funds for such purpose shall be made by the Planning Authority, in consultation with Dept. of Public Works and consulting engineers as appropriate. Applicant will submit to Planning Authority a report of their findings of existing flooding on Virginia Street to the extent that it can be determined and be done in consultation with the City's Engineer and filed with the City Planning Department.
  - iii. That the developer provide documentation to the City which states that NRPA Approval has been obtained by DEP.
  - iv. That the plans be revised in accordance with the DRC's memo dated 10/1/99 regarding MEDEP approval, erosion control, and pre-blast survey

- v. That the plans be revised in accordance with Public Works' memo dated 10/5/99 regarding manhole connections, inlet pipe between lots 16 and 17, curbing, and foundation connections.
- vi. That the drainage easements noted on the plan need to be identified as either Public or Private Easements as follows:

**The Pines at Wyoming**

The only public easement should be the 30 ft. easement shown on the plan.

**The Pines at Kansas**

All drainage easements should be private.

**The Pines at Phase I and II**

Public Easements should be as follows:

- the 50 ft. x 50 ft. drainage easement abutting lot 12
- the 30 ft. easement from the Falmouth Town line to Liberty Way
- a second 30 ft. easement between lots 16 and 17 from Falmouth to Liberty Way (not shown but requested)
- the 110 ft. x 200 ft. and 110 ft. x 100 ft. drainage easement in the vicinity of the culvert crossing Penn Avenue
- the 20 ft. drainage easement along the perimeter of the properties from Falmouth to Liberty Way.

All other drainage easements shall be noted as private easements.

- vii. A note shall be added to the plan which states "Lot 24 will not be developed until further review and approval by the Planning Board of requisite public improvements so as to render the remaining portion of Lot 24 as a marketable lot."
  - viii. that the building envelope for Lot 18 be revised to show a 25 ft. front and rear setback parallel to Liberty Way and the side setbacks shown as 16 ft. each.
  - ix. Ensure that as Lots 13, 15, 18 and 19 are developed that provisions are made to prevent increased rates of sheet flow so as to not cross southerly over the Dargie property and condition shall be noted on the Subdivision Plat.
2. That Section I of the Sectional Recording includes the previously approved Lots 1 through 6, proposed Lots 7 through 11, 13 through 17, 20 through 23, 25 through 30, common open space and the residual (future development parcel) Lot 24. Section II includes Lots 12, 18 and 19. Further, the Board does waive Section 14-495(h) which states that the approved section has to constitute at least twenty (20%) percent of the total number of lots. This condition is subject to submission of revised recording plat clearly showing Section I and Section II.

3. The Board also granted waivers of sidewalk on the southerly side of Wyoming Street, the westerly side of Liberty Way, and the southerly side of Kansas Avenue.

The approval is based on the submitted plan and the findings related to site plan review standards as contained in Planning Board #31-99a, which is attached.

Please note the following provisions and requirements for all subdivision approvals:

1. Mylar copies of the construction drawing for the subdivision must be submitted to the Public Works Department prior to the release of the plat.
2. A performance guarantee covering the site improvements as well as an inspection fee payment of 1.7% of the guarantee amount must be submitted to and approved by the Planning Division and Public works prior to the recording of the subdivision plat. The subdivision approval is valid for three (3) years.
3. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
4. Prior to construction, a preconstruction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the preconstruction meeting.
5. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)
6. The Development Review Coordinator (874-8721) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions regarding the Board's actions, please contact the planning staff.

Sincerely,

John H. Carroll, Chair  
Portland Planning Board

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development  
Alexander Jaegerman, Chief Planner  
Kandice Talbot, Planner  
P. Samuel Hoffses, Building Inspector  
Marge Schmuckal, Zoning Administrator  
Tony Lombardo, Project Engineer  
Development Review Coordinator  
William Bray, Director of Public Works  
Jeff Tarling, City Arborist  
Penny Littell, Associate Corporation Counsel  
Lt. Gaylen McDougall, Fire Prevention  
Inspection Department  
Lee Urban, Director of Economic Development  
Don Hall, Appraiser, Assessor's Office  
Susan Doughty, Assessor's Office  
Approval Letter File

**CITY OF PORTLAND, MAINE  
MEMORANDUM**

**TO:** Chair Carroll and Members of the Portland Planning Board  
**FROM:** Kandice Talbot, Planner  
**DATE:** September 28, 1999  
**RE:** The Pines Subdivision, Vicinity of Virginia Street

**Introduction**

The Pines of Portland, Inc. is requesting a workshop meeting to discuss four issues that staff has recommended. These four issues are 1) Re-building of Kansas Avenue; 2) install sidewalk along Virginia Street, from Penn Avenue to nearest built sidewalk on easterly side; 3) Sidewalk Waivers; and 4) \$15,000 drainage escrow account. These are items that the applicant does not agree with recommendations or requirements of the review staff. The applicant wishes to discuss the merits of each item with the Board at workshop, and to present their point of view. We have advised the applicant that the Board will not be able to decide these issues until the public hearing, but that an informal discussion is possible at workshop.

- 1. That the applicant rebuild Kansas Avenue from Virginia Street to limits of work, 24 ft. wide, with granite curb and sidewalks**

Kansas Avenue from Virginia Street to the limits of work is in very poor condition with bituminous curb and no sidewalks. Public Works is requiring that the applicant rebuild this portion of Kansas Avenue, which is approximately 250 ft.

The applicant does not want to rebuild Kansas Avenue for a number of reasons. Their memo is included as Attachment 1. The applicant states that Kansas Avenue was surfaced in 1996 and is in good condition and they assert that the approximate \$60,000 cost to rebuild this section would result in an extreme financial hardship. They also feel that any rebuilding process would result in inconvenience and disruption to the existing homeowners along Kansas Street.

- 2/3. That the applicant install sidewalk (no curb) along Virginia Street, from Penn Avenue to nearest built sidewalk on easterly side, built to meet Public Works standards. Sidewalk waivers along west side of Liberty Way, north side of Kansas Avenue, and south side of Wyoming Street**

Staff is recommending that the applicant install bituminous sidewalk from Penn Avenue to Wyoming Avenue, which is the extent of the subdivision. Although this is an off-site improvement, staff feels that it is an important part of the subdivision, for it will connect the different phases to one another, as well as the existing neighborhood. This sidewalk would also connect to an existing sidewalk along Virginia Street, from Allen Avenue to Racine Street. Staff walked Virginia Street with the applicant to view whether there were any obstructions that would

impede the construction of a sidewalk. With the exception of a couple of mature trees and a chain link fence, the sidewalk could be built. In the areas of the fence and trees, the sidewalk could be moved closer to the street.

The applicant is requesting a waiver of approximately 1,100 feet of sidewalk along Kansas Avenue, Wyoming Avenue and Liberty Way. The length of sidewalk that staff is recommending along Virginia Street is approximately 1,400 feet. Although staff is recommending against any waiver of sidewalk, the Board might consider the relative value and priority of all the sidewalks involved, including Virginia Street. There had been discussion of an alternative route for a trail along the Portland Water District ROW, but this is no longer under consideration.

**4. \$15,000 Drainage Escrow Account**

As done in other projects, because of the reservations concerning the drainage and how it will perform in the future, especially in the Penn Avenue area, where there is a channel that in the past has flooded abutters, staff is recommending that the applicant place \$15,000 in escrow for five years, after the completion of the project, in the event that problems occur within the channel. The applicant has addressed this issue in Attachment 4. They have stated that over the past year and a half the area has experienced two "one hundred year storms" and the drainage channel has performed reliably, and object to the escrow requirement. Staff and our consulting engineer remain concerned about possible downstream impacts from associated road and house lot development.

Attachments

1. Applicant's Letter addressing Kansas Avenue Rebuild
2. Applicant's Letter addressing Virginia Street Sidewalk
3. Applicant's Letter addressing Sidewalk Waivers
4. Applicant's Letter addressing \$15,000 Drainage Escrow Account
5. Subdivision Plat

**CITY OF PORTLAND, MAINE  
MEMORANDUM**

**TO:** Chair Carroll and Members of the Portland Planning Board

**FROM:** Kandice Talbot, Planner

**DATE:** August 10, 1999

**RE:** The Pines Subdivision, Vicinity of Virginia Street

**Introduction**

The Pines of Portland, Inc. is requesting review for a 29-lot single family subdivision. The subdivision is broken up into 3 areas, which are Penn Avenue, Kansas Avenue, and Wyoming Avenue.

Penn Avenue consists of 19 lots bounded by Nevada Avenue, Virginia Street, Maine Avenue, and the Falmouth line and is approximately 8.82 acres. Wyoming Avenue consists of 6 lots bounded by Kansas Avenue, Virginia Street and Racine Avenue and is approximately 2.69 acres. Kansas Avenue consists of 4 lots bounded by Illinois Avenue, Montana Street, Wyoming Avenue and Virginia Street and is approximately 2.37 acres. Remaining land consists of 15.72 acres.

**Background**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 recorded subdivision plan. Corporation Counsel has advised that because the applicant is combining lots, reconfiguring the original subdivision and platting a new street, the development must be reviewed under the subdivision ordinance, thus requiring Planning Board Review. The applicant was informed at the time of purchase that subdivision review would be required.

The applicant has also acquired additional land in this area, making it a total of 31.60 acres. Since the subdivision is over 30 acres and more than 15 lots, Site Location of Development Review may be required. Further discussion of this issue appears below, in item 7.

At previous meetings, staff recommended that the applicant supply the City with an overall drainage plan and overall plat showing the entire subdivision, for the area bounded by Wyoming Avenue, Virginia Street, Maine Avenue and the Falmouth line. Staff will discuss the findings further on in the memo.

The July 27<sup>th</sup> Planning Board meeting was tabled due to the fact that immediate abutters in Falmouth had not been notified of the subdivision. The Falmouth abutters have been notified for this meeting.

## Issues

Attached is a copy of the July 27<sup>th</sup> Planning Report. There were a number of conditions that needed to be addressed. Since the public hearing, staff has been working with the applicant to resolve these issues. An extensive meeting was held with the applicant and all staff in attendance. Staff met again the next day to get all revised comments out to the applicant that day and in writing. Included as Attachment 1 is the letter that resulted from the meeting with the applicant. Since then, the applicant submitted revised plans. The applicant has requested that this project be "fast-tracked" through the review process. As an apparent consequence of the attempt to expedite review, we have received inconsistent submissions and have not received complete material in a timely manner. Following are a list of all issues, along with a summary discussing the status of each item.

### **1. Standard Boundary Survey of entire subdivision shall be submitted.**

A boundary survey stamped by Robert Farthing, Land Surveyor, has been received by staff. This boundary survey now contains topographical information for the entire area.

### **2. Overall Subdivision Plat**

Staff requested that the wetlands area and the upland areas "to be retained for future development" be labeled with lot number(s) and that a schematic layout of Kansas Avenue Extension be shown on the plat.

As the Board may recall from previous discussions, the applicant is proposing that a 4 ft. x 6 ft. culvert located at Penn Avenue will act as a dam and will retain the drainage within the wetlands area to the north of Penn Avenue. This wetlands area will serve as a large storage area for stormwater. Staff also requested that specific delineation of the retention area to service this subdivision be clearly identified on the plan and a note be added which states that no alteration of the retention area will occur. Lacking any further documentation by the applicant, it is recommended that the entire wetland area be designated as the retention area with these development restrictions. Also, it remains unclear who will own this retention area. Staff has asked this question repeatedly, but have not been provided an answer.

The applicant needs to clearly mark which area will be the retention area, open space and future development. Although staff understands the applicant wishes to keep all options open, the wetlands area has been described as the retention area and if any filling of this area occurs, it may affect the drainage in this area, and the impacts could create problems.

### **3. Sub subdivision plats for Kansas, Penn and Wyoming shall be revised to meet full plat requirements.**

The applicant is requesting sidewalk waivers (see Attachment 3) from the Planning Board for the following streets: 1) The west side of Liberty Way; 2) The north side of Kansas Avenue; and 3) The south side of Wyoming Avenue. The applicant is proposing granite curb for both sides of these streets, but feels that sidewalks on both sides of the street are redundant for such a small neighborhood. Existing policy is to not grant such waivers except in unique conditions with significant hardship factors. These waiver requests totals approximately 1,100 feet of sidewalk.



Wyoming Avenue

The sub subdivision plat issues regarding notes on plans for Wyoming Avenue have been addressed by the applicant. (see also items 28 and 29)

Penn Avenue

The sub subdivision plat issues regarding notes on plans for Penn Avenue have been addressed by the applicant. (see also items 17-23)

Kansas Avenue

The sub subdivision plat issues regarding notes on plans for Kansas Avenue have been addressed by the applicant. (see also items 24-27)

4. **that the applicant submit letters from the Portland Water District and Portland Sewer Division for the entire subdivision.**

Portland Water District letters have been received. Frank Brancely, Sewer Division, is currently working on a letter for sewer capacity for the entire subdivision.

5. **that the subdivision plans show building envelopes, first floor elevations and conceptual grading plans for planning review and approval, and once reviewed, additional drainage easements may be needed.**

The applicant has revised the building envelopes to show actual building area, not just setback area. Staff requested that conceptual grading plans for individual lots be submitted showing flow arrows for surface drainage. The applicant is not providing individual grading plans (see Attachment 4). They feel that their engineer has included appropriate drainage easements on the subdivision plans and if, after the individual minor site plans are submitted and reviewed, additional drainage easements are required, they will be included on the conveyance of individual lots at that time.

Staff does not find this acceptable. As mentioned in the Planning Report (and discussed further under item 14), the drainage plan is very sketchy, due to the fact that it was based on aerial photography not a topographical survey. Staff has found in the past, that once an individual lot is sold off, it is almost impossible to obtain a drainage easement for the benefit of an abutting lot, so it is imperative to determine location of drainage easements during the subdivision review. Also providing individual grading plans at time of minor site plan review could result in conflicts between lot grading plans. The Board may recall the Tucker Avenue subdivision, which was required to provide a number of drainage easements on individual lots during the subdivision review process. In summary, this required level of information and analysis is one of the most critical aspects of subdivision review, and the most often to cause subsequent problems between neighbors if not properly addressed in advance.

6. that notes be added to the subdivision plan to state 1)"No City of Portland public services shall be provided to The Pines Development until the streets have been accepted by the City."; 2)"Parking to be limited to one side of the street only. The side that parking will be allowed on, will be the side facing an arterial. The Developer will install signs denoting this per the City's requirements prior to acceptance of the street by the City."; 3)Notes will be added to the recording plat with references within respective lots that "Access will be limited on one street only, when lots front on more than one street"; this applies to lots 1, 2, 3, 7, 12, 13, 18, 19 of Penn Avenue Phase, lots 1-4 of Kansas Avenue Phase, lots 2 and 5 of Wyoming Avenue Phase and specify specific streets; and 4) "Street name signs and stop signs are to be erected per the City requirements by the developer prior to acceptance of the street by the City."

These notes have been added to the subdivision plans.

7. that staff confirm with DEP, based on the revised subdivision plat, that their determination of site location is not required remains standing, or that the development receive site location approval if required.

Staff met with Mary Beth Richardson of DEP on Thursday, July 29<sup>th</sup> to confirm its determination that site location is not required for this subdivision. Since the determination was based on information provided verbally and did not include the plans currently under review by the city, staff is requesting that the developer provide all necessary plans to Heddy Richardson of DEP to receive a formal advisory opinion as to whether Site Location is required at this time. As long as sufficient land is removed from development for at least five years to bring the developed acreage to less than 30 acres (including retention area) the project would be exempt from site location review. A note shall be added to the subdivision plat which states "If land labeled *"to be retained by Pines of Portland"* is developed within 5 years, site location review may be required for the entire subdivision at that time."

8. that monumentation be provided for all street to the specification of Public Works surveyor.

It was discussed that granite monuments shall be installed on at least one side of the street per City specifications and shall be shown on all plans accordingly. It appears that the applicant has not provided any monumentation at this time.

9. that pressure treated guardrails be installed at the end of each built street.

It was discussed that pressure treated guardrails would be installed beyond the end of pavement on all down slope streets. The applicant is proposing a guardrail at the end of Wyoming Avenue. Public Works will need to review this revision.

10. that the streets be labeled "shall be built" or "shall not be built" on the overall subdivision plat.

The applicant has labeled the streets accordingly.

**11. that the overall subdivision plat should specify and clarify lot designations for "open space"**

At this time, the applicant does wish to specify any open space area (see Attachment 5). The applicant has stated that land designated as "to be retained by Pines of Portland" shall be used for future development, or open space to be defined when and if Kansas Avenue extension is developed.

As mentioned previously, staff has serious reservations because some of land noted "to be retained by Pines of Portland" is the wetlands area which the applicant has stated will retain stormwater.

**12. that the applicant clarify rights lot owners will have, if any, to undeveloped area.**

The applicant states that once the open space area is defined, it shall be either owned in common with the lot owners or deeded to a land trust such as Portland Trails. This should be determined before the subdivision plat is recorded.

**13. that the applicant have the Inland Wildlife division determine if there is significant wildlife habitat with the boundary area.**

A letter has been provided to staff from Inland Wildlife, indicating no significant wildlife habitat.

**14. that the applicant revise plans and address comments in accordance with the DRC's memo dated 7/20/99.**

The Development Review Coordinator reviewed the 7/23/99 submittal. His comments are included as Attachment 2. As mentioned previously in this memo, the stormwater report is very sketchy. The analysis is not clear as to how much flooding will occur in the wetland area. This is a significant problem since the overall boundary plan notes that some type of development may occur in the remaining land. Also the stormwater analysis is based on a developed condition of the wetland area for purposes of estimating future stormwater flows. This raises the questions of 1) how will future filling of the wetlands area alter the ponding of stormwater at upstream and downstream of Penn Avenue and 2) what are its implications on the adjacent abutters to the stream? For specific examples, the DRC notes that upstream culvert crossings on Virginia Street, in the vicinity of Illinois and near Nevada, could be affected, but the documentation is insufficient to determine what affect, if any, will result. Therefore, staff again recommends that a stormwater management master plan be prepared. The applicant has not addressed this issue.

**15. that the applicant submit a wetlands delineation map and study by a Wetlands specialist for entire subdivision.**

The applicant had represented to staff that an entire wetlands study had been submitted to DEP previously. At the meeting with DEP, staff requested a copy of this wetlands study. The only study provided to DEP by the applicant was for the extent of the work done for Lots 3 and 4 of the Penn Avenue Phase I project. Based on this finding, staff is requesting again that a full, on the ground topographic survey and wetlands mapping delineation for the entire approximate 31 acres be provided.

- 16. due to the incomplete plans, staff reserves the right to suggest/require additional conditions of approval.**

Because of known flooding problems at the property on the end of Vermont Avenue, staff is requesting a drainage maintenance agreement for the portion of the channel running through the applicant's property be provided to staff (from the end of the box culvert in Penn Avenue southward). The applicant is currently working on this request.

As done in other projects, because of the reservations concerning the drainage and how it will perform in the future, especially in the Penn Avenue area, where there is a channel that in the past has flooded abutters, staff is recommending that the applicant place \$15,000 in escrow for ten years, in the event that problems occur within the channel. The applicant has addressed this issue in Attachment 6. They have stated that over the past year and a half the area has experienced two "one hundred year storms" and the drainage channel has performed reliably, and object to the escrow requirement.

The developer shall provide the drainage easement for Penn Avenue Phase 1, prior to release of the existing performance guarantee.

The applicant has shown hydrants on the street profile plans. The Fire Department is reviewing the location of the hydrants.

#### **Penn Avenue Phase**

- 17. that the applicant pave Vermont Avenue the entire frontage of Lots 18 and 19 and pave Jersey Avenue, the entire frontage of Lot 12 to the Falmouth town line westerly and easterly on Jersey Avenue or that the applicant achieve a variance for the requirement to pave the entire frontage of Lot 12 on Jersey Avenue and Lots 18 and 19 on Vermont Avenue and a deed and plat restriction that no further development on Lots 12 and 19 be allowed or that they reduce the size of lots 12 and 19 by drawing property line at end of pavement or that the applicant vacate the portion of the streets mentioned above.**

The applicant indicated at the meeting that they may address this issue by street vacation and have submitted a one sentence letter to that effect. The plans show these street not being built the entire frontage. However, the applicant has not submitted the street vacation application and mortgagee holders within the existing subdivision have not been notified of the street vacation request, so the street vacation will have to be addressed at a future meeting. Because the lot configuration does not comply with zoning without these street vacations, and the vacation is required for the lots as shown on the plats, the vacation must be processed and approved by the City Council before the subdivision can be finalized. This could either be a condition of approval or a cause for tabling of the subdivision.

- 18. show new watershed plan is compatible with previous watershed plan for Penn Avenue and prove that it meets pre conditions with regard to culvert on Penn Avenue; in the event that pre conditions are not met, an additional stormwater detention system may be required upstream.**

This was addressed previously in comment #14.

**19. that the applicant provide sidewalks built to city specs. on both sides of cross street.**

This has been addressed previously.

**20. a note should be added to subdivision plat stating that remaining unbuilt portion of Penn Avenue, westerly to Falmouth, "shall not be built"**

As mentioned above in item 17, the applicant wishes to vacate the remaining portion of Penn Avenue, westerly to Falmouth.

**21. that the applicant provide private drainage easements along rear property of lots 10, 11, 12, 16, 17, and 18 and direct drainage to undeveloped portion of Penn Avenue.**

The applicant has shown drainage easements along Lot 10, between lots 16 and 17, and on the southerly side of Lots 18 and 19. These drainage easements appear to match drainage easements that run in this direction from a Falmouth subdivision. The DRC is currently reviewing this.

**22. that the applicant provide drainage easements on southerly side of lots 18 and 19 and northerly side of lots 12 or in Nevada Avenue and direct drainage to wetland area.**

Addressed in comment #21.

**23. that the applicant submit the street name for the cross street for review and approval by the Fire Department.**

The Fire Department has approved Liberty Way as the proposed street name.

#### **Kansas Avenue**

**24. that the applicant rebuild Kansas Avenue from Virginia Street to limits of work, 24 ft. wide, with granite curb and sidewalks.**

Kansas Avenue from Virginia Street to the limits of work is in very poor condition with bituminous curb and no sidewalks. Staff is recommending that the applicant rebuild this portion of Kansas Avenue. The applicant is suggesting a compromise to this recommendation. They are proposing to share in the cost of rebuilding the 24 ft. wide road fifty-fifty with the City on the removal of existing pavement and bituminous curb, reshaping, grading and resurfacing pavement. They are not proposing to share in any cost of the sidewalks or granite curb because there are none existing. The applicant's comments are included as Attachment 7. Staff does not recommend cost sharing with the city. If such a condition were imposed, funding for the city portion would have to be secured through the CIP prior to release of the plat.

- 25. that the applicant install sidewalk (no curb) along Virginia Street, from Penn Avenue to nearest built sidewalk on easterly side, built to meet Public Works standards.**

Staff is recommending that the applicant install bituminous sidewalk from Penn Avenue to Wyoming Avenue, which is the extent of the subdivision. Although this is an off-site improvement, staff feels that it is an important part of the subdivision, for it will connect the different phases to one another, as well as the existing neighborhood. This sidewalk would also connect to an existing sidewalk along Virginia Street, from Allen Avenue to Racine Street. Staff walked Virginia Street with the applicant to view whether there were any obstructions that would impede the construction of a sidewalk. With the exception of a couple of mature trees and a chain link fence, the sidewalk could be built. In the areas of the fence and trees, the sidewalk could be moved closer to the street.

The applicant is requesting a waiver of approximately 1,100 feet of sidewalk along Kansas Avenue, Wyoming Avenue and Liberty Way. The length of sidewalk that staff is recommending along Virginia Street is approximately 1,400 feet. Although staff is recommending against any waiver of sidewalk, the Board might consider the relative value and priority of all the sidewalks involved, including Virginia Street.

Also, the applicant has mentioned many times to staff that Portland Trails is looking to connect a trail from the Ocean Avenue dump to Lyseth School on Auburn Street along the Portland Water District property which abuts the subdivision. The applicant suggests that this would be a good alternate connection for the neighborhood. However, Portland Trails has indicated that at this time they are working with the Portland Water District to place a trail from Pine Grove Park to Lyseth School. They have not yet explored thoroughly the connection from Pine Grove Park to the Ocean Avenue dump. An alternative to the construction of the sidewalk on Virginia Street, would be that the applicant propose to obtain permission and build a paved trail within the Portland Water District property which runs parallel to Virginia Street from Penn to Wyoming.

- 26. that the applicant relocate hammerhead turnaround at end of Kansas Avenue to opposite side on Lot 1.**

The applicant has revised the plan to show a temporary box end on the end of Kansas Avenue for snowplow turnaround. This box end gives the applicant the opportunity to extend Kansas Avenue in the future.

- 27. that the applicant build Kansas Street the extent of the frontage on lot 1 or that the applicant achieve a variance for this requirement and no further development on Lot 1 or that the applicant move the property line of Lot 1 to the end of the built street or that the applicant vacate the portion of the street mentioned above.**

The applicant has reconfigured Lot 20 on Kansas Avenue so that they would only have to build the street within the wetlands area. A note has been added to the plan that the remaining area will not be developed, nor conveyed, to Lot 20.

Wyoming Street

28. that the applicant revise the Wyoming Avenue plans to show the sidewalk and include a four foot wide vegetated esplanade on the northerly side of Wyoming Avenue.

The applicant is requesting a waiver of sidewalk along the southerly side of Wyoming Avenue.

29. that the applicant revise the hammerhead turnaround in accordance with the city standards.

The plan has been revised to address this concern.

Motions for the Board to Consider

This project continues to be more a work in progress than a complete and final plan. Staff has worked hard to identify issues and to suggest resolutions to the applicant. Many issues have been resolved, but others have not. Staff recommends that the public hearing be held as advertised, however we cannot recommend approval at this time. As is standard practice, we present motions for approval with detailed potential conditions for Board consideration. Given the numerous and substantive nature of the potential conditions, the Board might wish to entertain a tabling motion.

**On the basis of plans and material submitted by the applicant and on the basis of information contained in Planning Report #31-99 and Planning Board Memo dated 8/10/99 relevant to the standards of Subdivision Review, the Planning Board finds:**

1. **Sidewalk Waiver - South Side of Wyoming Street**

- a. Extraordinary conditions do/do not exist (if yes, please specify those conditions); or
- b. Undue hardship will/will not result (if yes, please specify the hardship).

The Board further finds that the granting of the waiver of sidewalk on the southerly side of Wyoming Street will/will not create potentially hazardous vehicle and pedestrian conflict or that it will/will not nullify the intent and purpose of the land development plan and the City ordinances.

As a result, the Board does/does not grant the request for a waiver of the sidewalk requirements.

2. **Sidewalk Waiver - West Side of Liberty Way**

- a. Extraordinary conditions do/do not exist (if yes, please specify those conditions); or
- b. Undue hardship will/will not result (if yes, please specify the hardship).

The Board further finds that the granting of the waiver of sidewalk on the westerly side of Liberty Way will/will not create potentially hazardous vehicle and pedestrian conflict or that it will/will not nullify the intent and purpose of the land development plan and the City ordinances.

As a result, the Board does/does not grant the request for a waiver of the sidewalk requirements.

3. **Sidewalk Waiver - North Side of Kansas Avenue**

- a. Extraordinary conditions do/do not exist (if yes, please specify those conditions); or
- b. Undue hardship will/will not result (if yes, please specify the hardship).

The Board further finds that the granting of the waiver of sidewalk on the northerly side of Kansas Avenue will/will not create potentially hazardous vehicle and pedestrian conflict or that it will/will not nullify the intent and purpose of the land development plan and the City ordinances.

As a result, the Board does/does not grant the request for a waiver of the sidewalk requirements.

**The Planning Board also finds:**

- i. That the proposed development is/is not in conformance with the Subdivision Ordinance of the Land Use Code

Potential Conditions of Approval:

**Overall Subdivision**

- 1. Overall subdivision plat shall be revised to label wetlands area and upland areas "to be retained for future development" with lot numbers and that a schematic layout of Kansas Avenue Extension be shown. Also, the applicant needs to clearly delineate which areas will be retention area, open space area and future development. A note shall also be added to the plan stating "no alteration of the retention area will occur."
- 2. that the applicant submit a capacity letter from the Portland Sewer Division for the entire subdivision.
- 3. that the subdivision plans show conceptual grading plans for planning review and approval, and once reviewed, additional drainage easements may be needed.
- 4. that the applicant receive a formal DEP advisory opinion as to whether Site Location of Development is required and if necessary a note will be added to the plan which states "If land labeled *"to be retained by Pines of Portland"* is developed within 5 years, site location review may be required for the entire subdivision at that time."
- 5. that monumentation be provided for all streets to the specification of Public Works surveyor.
- 6. that Public Works review and approve the plans in regards to location of guardrails, sidewalks and hammerheads.
- 7. that the applicant clarify rights lot owners will have, if any, to undeveloped area.
- 8. that the applicant revise plans and address comments in accordance with DRC's memo dated 7/20/99. Also the DRC will review and approved location of proposed drainage easements.



9. that the applicant submit a wetlands delineation map and study by a wetlands specialist for entire subdivision.
10. that the applicant provide a drainage maintenance agreement for review and approval by staff for the portion of the channel running through the applicant's property.
11. that the applicant place \$15,000 in escrow for ten years, in the event that problems occur within the channel as described in item 16.
12. the developer shall provide the drainage easement for Penn Avenue Phase I, prior to release of the existing performance guarantee.
13. that locations of fire hydrants be reviewed and approved by the Fire Department.
14. due to incomplete plans, staff reserves the right to suggest/require additional conditions of approval.
15. that the applicant install sidewalk (no curb) along Virginia Street, from Penn Avenue to Wyoming Avenue on easterly side, built to meet Public Works standards or else provide an alternate paved multi-use trail along the Portland Water District ROW (pending permission) parallel to Virginia Street from Penn to Wyoming, in consultation with Portland Trails.

#### **Penn Avenue Phase**

16. that the applicant submit application and obtain approval by the City Council for street vacations of Jersey Avenue, Vermont Avenue and portion of Penn Avenue, from Liberty Way to Falmouth line, prior to signing and release of subdivision plat.
17. that the applicant show new watershed plan is compatible with previous watershed plan for Penn Avenue and prove that it meets pre-conditions with regard to culvert on Penn Avenue. In the event that pre-conditions are not met, an additional stormwater detention system may be required upstream.

#### **Kansas Avenue**

18. that the applicant rebuild Kansas Avenue from Virginia Street to limits of work, 24 ft. wide, with granite curb and sidewalks.

Attachments:

1. Letter from Staff to Applicant dated July 30, 1999
2. Memo from DRC dated July 30, 1999
3. Memo from Applicant regarding Sidewalk Waiver
4. Memo from Applicant regarding Conceptual Grading
5. Memo from Applicant regarding Open Space
6. Memo from Applicant regarding Escrow Account
7. Memo from Applicant regarding Kansas Avenue Re-Construction
8. Memo from Applicant regarding Virginia Street Sidewalk
9. Memo from Applicant regarding Street Vacations
10. Wetland Study Submitted to DEP
11. Falmouth Abutter's List
12. Letter from Neighbor
13. Letter IFW Wildlife Division
14. Portland Trails System
15. Revised Plans
16. July 27th Report

**PLANNING BOARD REPORT #31-99**

**THE PINES SUBDIVISION  
SUBDIVISION REVIEW  
THE PINES OF PORTLAND, INC., APPLICANT**

Submitted to:

Portland Planning Board  
Portland, Maine

July 27, 1999

**I. INTRODUCTION**

The Pines of Portland, Inc. is requesting review for a 29-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 4 lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. A vicinity map is included as Attachment 1.

The subdivision is broken up into 3 areas, which are Penn Avenue, Kansas Avenue, and Wyoming Avenue. Penn Avenue consists of 19 lots bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Falmouth line. Wyoming Avenue consists of 6 lots bounded by Kansas Avenue, Virginia Street and Racine Avenue. Kansas Avenue consists of 4 lots and is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street.

492 notices were sent to area residents. A legal ad appeared in the July 19th and 20th editions of the Portland Press Herald. There is a concern from an Falmouth abutter that he should have been notified of this project.

**II. BACKGROUND**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. Corporation Counsel feels that because the applicant is combining lots, reconfiguring the original subdivision and platting a new street, it must be reviewed under the subdivision ordinance, thus requiring Planning Board Review.

The applicant has also acquired additional land in this area making it a total of 34 acres that is included in this overall subdivision scheme.

At previous meetings, staff recommended that the applicant supply the City with an overall drainage plan for the area bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth Line. Staff has received the overall drainage plan and will discuss the findings further on in the report. Staff has also requested an overall plat showing the entire subdivision. This overall plat should present, for the entire acreage, the information listed under plat requirements of Section 14-496 a through x.

**III. SUMMARY OF FINDINGS**

Zone:	R-3
Subdivision Area:	34 acres
Number of Lots:	29 single family lots
Parcel Sizes:	ranging from 9,000 sq. ft. to 84,118 sq. ft.
Adjacent Uses:	Residential

**IV. STAFF REVIEW**

Public Works is recommending that the snowplow turnaround be placed at the end of Lot 4 and meet city standards.

#### Penn Avenue

The applicant is proposing to extend Penn Avenue approximately 500 feet to the west. The applicant is then proposing to build a cross street to connect to property along Vermont Avenue and Jersey Avenue. Staff has not been provided with a name for the proposed cross street. The applicant is proposing sidewalk and granite curb along the Penn Avenue extension. Along the cross street, the applicant is proposing granite curb along both sides, but is proposing sidewalk on the easterly side only. Public Works' is recommending that sidewalk be installed on both sides of the cross street.

City ordinance requires that all streets be built to the extent of the frontage of the property. The applicant is not proposing to build the street to the end of proposed lots 18 and 19 on Vermont Avenue or Lot 12 on Jersey Avenue.

#### Kansas Avenue

The applicant is proposing to extend Kansas Avenue approximately 250 feet to the west. The applicant is proposing granite curb along both sides of the proposed extension. Sidewalk is proposed along the southerly side of Kansas Avenue. Because of the condition of the existing Kansas Avenue, Public Works is recommending that the applicant rebuild Kansas Avenue from Virginia Avenue to limits of work, 24 ft. wide with granite curb and sidewalk on both sides.

### 6. Sanitary/Stormwater

#### **Sanitary**

The applicant is proposing to install new sewer lines within Wyoming Avenue, Penn Avenue and the cross street. There is an existing sewer line within Kansas Avenue that the applicant is proposing to utilize. The applicant must submit from the Sewer Division a capacity letter stating that there is adequate sewer capacity for the entire subdivision.

#### **Stormwater**

The site consists of 34 acres bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth line. The total watershed, which includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line, consists of 300± acres. As mentioned above, an overall drainage plan was submitted. The drainage plan is very sketchy, due to the fact that it was based on aerial photography not a topographical survey. The Development Review Coordinator has spent an extensive amount of time reviewing the watershed plans because they were not adequate. The proposal is that the 4 ft. x 6 ft. culvert located at Penn Avenue will act as a dam and will retain the drainage within the wetland areas to the north of Penn Avenue. This wetland area will serve as a large storage area for stormwater.

The DRC has reviewed the plans and staff has walked the site, but could not reach the interior of the site. A topographical survey of the entire subdivision would be necessary to do a complete and adequate review of the stormwater.

One of the issues that staff had hoped would be addressed by the overall stormwater plan, was whether drainage easements would be required for individual lots. Given the contiguous property between the applicant property and Falmouth property, staff has requested drainage plans and stormwater studies from the Falmouth Town Planner. We have received one subdivision plan, and Public Works has received a watershed plan of the property in Falmouth. A memo from the DRC is included as Attachment 16.

7. Solid Waste Disposal

Curb side pickup is proposed.

8. Scenic Beauty

There is a concern that this area could be home to significant wildlife habitat. Staff is recommending that the applicant have Inland Wildlife identify if this area has significant wildlife habitat.

9. Comprehensive Plan

This development meets the requirements of the City of Portland Comprehensive Plan.

10. Financial Capability

The applicant has provided a letter of financial capability.

11. Groundwater

The development as proposed will not adversely affect the quality or quantity of groundwater.

12. Flood Hazard/Shoreline

The site is not located in the flood hazard or shoreland zones.

## **VI. MOTIONS FOR THE BOARD TO CONSIDER**

Note: On July 23, the engineers, legal, and planning staff spent two hours in meeting discussing the details and issues represented by this project in light of the limited and insufficient

documentation submitted to date. We have crafted conditions of approval for as many of the issues as possible, however it is obvious that more work is needed and further revisions are required on these plans. Materials submitted after 1:00 Friday the 23rd are attached but have been reviewed by staff. It is the recommendation of the Chief Planner that the Board take public comment, review the issues and the progress to date, and table this item until more complete and revised plans are submitted and reviewed. The turn-around time between workshop and public hearing was simply inadequate for the applicant to submit complete plans. As an alternative, the Board could approve this item with all of the conditions listed below.

**Sidewalk Waiver - South Side of Wyoming Street:**

On the basis of plans and material submitted by the applicant and on the basis of information contained in Planning Report #31-99 relevant to the standards Subdivision Review, the Planning Board finds:

- a. Extraordinary conditions do/do not exist (if yes, please specify those conditions); or
- b. Undue hardship will/will not result (if yes, please specify the hardship).

The Board further finds that the granting of the waiver of sidewalk on the southerly side of Wyoming Street will/will not create potentially hazardous vehicle and pedestrian conflict or that it will/will not nullify the intent and purpose of the land development plan and the City ordinances.

As a result, the Board does/does not grant the request for a waiver of the sidewalk requirements.

The Planning Board also finds:

- i. That the proposed development is/is not in conformance with the Subdivision Ordinance of the Land Use Code

**Potential Conditions of Approval:**

**Overall Subdivision**

- 1. Standard Boundary Survey of entire subdivision shall be submitted.
- 2. Overall subdivision plat shall be submitted.
- 3. Sub subdivision plats for Kansas, Penn and Wyoming shall be revised to meet full plat requirements.
- 4. that the applicant submit capacity letters from the Portland Water District and Portland Sewer Division for the entire subdivision.
- 5. that the subdivision plans show building envelopes, first floor elevations and conceptual grading plans for planning review and approval, and once reviewed, additional drainage easements may be needed.
- 6. that notes be added to the subdivision plan to state 1)"No City of Portland public

services shall be provided to The Pines Development until the streets have been accepted by the City."; 2)"Parking is to be limited to one side of the street only. The side that parking will be allowed on, will be the side facing an arterial. The Developer will install signs denoting this per the City's requirements prior to acceptance of the street by the City."; 3)Notes will be added to the recording plat with references within respective lots that "Access will be limited to one street only, when lots front on more than one street"; this applies to lots 1, 2, 3, 7, 12, 13, 18, 19, of Penn Avenue Phase, lots 1-4 of Kansas Avenue Phase, lots 2 and 5 of Wyoming Avenue Phase and specify specific streets; and 4)"Street name signs and stop signs are to be erected per the City requirements by the developer prior to acceptance of the street by the City."

7. that staff confirm with DEP, based on the revised subdivision plat, that their determination of site location is not required remains standing, or that the development receive site location approval if required.
8. that monumentation be provided for all streets to the specification of Public Works surveyor.
9. that pressure treated guardrails be installed at the end of each built street.
10. that the streets be labeled "shall be built" or "shall not be built" on the overall subdivision plat.
11. that the overall subdivision plat should specify and clarify lot designations for "open space"
12. that the applicant clarify rights lot owners will have, if any, to undeveloped area.
13. that the applicant have the Inland Wildlife determine if there is significant wildlife habitat with the boundary area.
14. that the applicant revise plans and address comments in accordance with DRC's memo dated 7/20/99.
15. that the applicant submit a wetlands delineation map and study by Wetlands specialist for entire subdivision.
16. due to the incomplete plans, staff reserves the right to suggest/require additional conditions of approval

#### **Penn Avenue Phase**

17. that the applicant pave Vermont Avenue the entire frontage of Lots 18 and 19 and pave Jersey Avenue, the entire frontage of Lot 12 to the Falmouth town line westerly and easterly on Jersey Avenue or that the applicant achieve a variance for the requirement to pave the entire frontage of Lot 12 on Jersey Avenue and Lots



18 and 19 on Vermont Avenue and a deed and plat restriction that no further development on Lots 12 and 19 be allowed or that they reduce the size of lots 12 and 19 by drawing property line at end of pavement or that the applicant vacate the portion of the streets mentioned above.

18. show new watershed plan is compatible with previous watershed plan for Penn Avenue and prove that it meets pre conditions with regard to culvert on Penn Avenue; in the event that pre conditions are not met, an additional stormwater detention system may be required upstream.
19. that the applicant provide sidewalks built to city specs. on both sides of cross street.
20. a note should be added to subdivision plat stating that remaining unbuilt portion of Penn Avenue, westerly to Falmouth, "shall not be built"
21. that the applicant provide private drainage easements along rear property of lots 10, 11, 12, 16, 17, and 18 and direct drainage to undeveloped portion of Penn Avenue.
22. that the applicant provide drainage easements on southerly side of lots 18 and 19 and northerly side of lots 12 or in Nevada Avenue and direct drainage to wetland area.
23. that the applicant submit the street name for the cross street for review and approval by the Fire Department.

#### **Kansas Avenue**

24. that the applicant rebuild Kansas Avenue from Virginia Street to limits of work, 24 ft. wide, with granite curb and sidewalks.
25. that the applicant install sidewalk (no curb) along Virginia Street, from Penn Avenue to nearest built sidewalk on easterly side, built to meet Public Works standards.
26. that the applicant relocate hammerhead turnaround at end of Kansas Street to opposite side on Lot 1.
27. that the applicant build Kansas Street the extent of the frontage on lot 1 or that the applicant achieve a variance for this requirement and no further development on Lot 1 or that the applicant move the property line of Lot 1 to the end of the built street or that the applicant vacate the portion of the street mentioned above.

#### **Wyoming Street**

28. that the applicant revise the Wyoming Avenue plans to show the sidewalk and include a four foot wide vegetated esplanade on the northerly side of Wyoming Avenue.

29. that the applicant revise the hammerhead turnaround in accordance with the city standards.

Attachments:

1. Vicinity Map
2. Corporation Counsel's Letter to Applicant's Attorney
3. Wyoming Avenue Stormwater Report
4. Applicant's Request for Sidewalk Waiver along Wyoming Avenue
5. Public Works' Memo dated 5/18/99
6. Letter from Murray, Plumb & Murray dated 7/2/99
7. Development Review Coordinator's Request for Overall Drainage Plan
8. Letter from Staff dated 7/2/99
9. Drainage Analysis
10. Letter from Resident
11. Master Plan
12. Wyoming Avenue Plans
13. Kansas Avenue Plans
14. Penn Avenue Plans
15. Drainage Analysis Plans
16. DRC's Memo dated 7/20/99
17. DEP Determination dated 7/22/99
18. Army Corp. Letter Re: Penn Street Ext.
19. Additional Letters from Residents
20. Applicant's Submittal dated 7/23/99



# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

20j

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

July 14, 1999

Mr. Gregory T. McCormack  
A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Re: The Pines at Penn. Avenue, Portland

Dear Greg:

The Portland Water District has an 8" water main in Penn. Avenue, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 70 psi; residual pressure 57 psi; with a flow of 1267 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS  
Engineering Supervisor



# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

20K

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

July 14, 1999

Mr. Gregory T. McCormack  
A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Re: The Pines at Kansas Avenue, Portland

Dear Greg:

The Portland Water District has an 8" water main in Kansas Avenue, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 66 psi; residual pressure 44 psi; with a flow of 1113 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS  
Engineering Supervisor

**BELL ATLANTIC**

Diane Traffon  
5 Davis Farm Road  
Portland, Maine 04103

20L

July 21, 1999

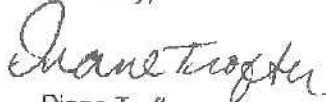
Greg Mc Cormack  
426 Forest Ave  
Portland, Maine 04101

Dear Greg:

In response to your letter regarding the proposed extensions of six lots at Wyoming Ave, four lots at Kansas Ave, and thirteen lots at Penn Ave, Bell Atlantic has adequate facilities to service these locations.

Please keep me informed as to the timing of this project so that I can coordinate the placement of these facilities.

Sincerely,



Diane Traffon  
Engineer

**CITY OF PORTLAND, MAINE  
MEMORANDUM**

**TO:** Chair Carroll and Members of the Portland Planning Board

**FROM:** Kandice Talbot, Planner

**DATE:** July 13, 1999

**RE:** Wyoming Avenue, Kansas Avenue, and Penn Avenue Subdivision

**Introduction**

A & G Associates is requesting workshop review for a 29-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 4-lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. A vicinity map is included as Attachment 1.

**Background**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. Corporation Counsel feels that because the applicant is combining lots it would need to be reviewed under the subdivision ordinance, thus requiring Planning Board Review.

At the previous Planning Board Workshop, staff recommended that the applicant supply the City with an overall drainage plan for the area bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth Line. A memo is included as Attachment 7 outlining the requirements of this overall drainage plan.

**The Pines Master Plan**

In our letter to the applicant of July 2nd (Attachment 8), we requested a plat showing the entire subdivision. The applicant has submitted an overall plan showing three proposed phases of The Pines Subdivision. It is not clear from this submission whether there will be further development of the subdivision acreage beyond the three phases requested for approval at this time. The overall plan should present, for the entire acreage, the information listed under plat requirements of Section 14-496 a through x. Given the acreage involved, we are concerned about the overall drainage system as it affects the watershed, upstream throughout the site, and downstream. As an old platted subdivision, the street layout from 1926 will be utilized in part, some platted streets will not be improved, and some new streets are proposed. We need to have an overall pedestrian and vehicular circulation plan showing how the roadways will be built incrementally and interconnected as the project proceeds in phases and to completion.

An overall drainage analysis was just received and is included as Attachment 9. At this time, the DRC

and Public Works have not had a chance to review the analysis.

The drainage analysis states that "in the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary." Staff is requesting that the master plan show all areas of future development, along with any proposed roads. The master plan should show any proposed pedestrian access or open space. Any additional submissions listed in 14-496(x) are a construction plan of the sequence of construction which should include a longer range phasing plan. Also buffer strips and natural areas and features must be shown, such as the wetlands and pond. The applicant has indicated area will be preserved as a conservation area. The locations of these should be shown, and the ownership, access, and use of these areas should be addressed.

Since most of the proposed lots front on more than one street, the Planning Board may wish to place a condition that states that all lots fronting on two streets may only have access from one street.

### **Wyoming Avenue**

This six lot single family phase is bounded by Kansas Avenue, Virginia Street, and Racine Avenue. The applicant is proposing to extend Wyoming Avenue approximately 370 feet to the east. The street will include storm drains, sewer, water and underground electric. There is also a small stream that crosses the subdivision. A 30" diameter pipe will be installed to convey the flow of the stream under the road. This subdivision is within the R-3 zone. The lot sizes range from 9,000 sq. ft. to 24,500 sq. ft.

The applicant is proposing sidewalk and granite curb on one side of the street. The applicant is also not proposing any esplanade between the street and the sidewalk. Public Works has reviewed this request and does not object to the construction of a sidewalk on only one side of the street. They would prefer this sidewalk on the northerly side of Wyoming Avenue. Public Works, however, is requiring the applicant to include a four foot wide vegetated esplanade on the northerly side of Wyoming Avenue. Public Works' Memo is included as Attachment 5.

The applicant is proposing that the sites sheetflow to the rear of the properties. At this time it appears that the submittal for the Wyoming Avenue Phase is complete.

### **Penn Avenue**

This 19 lot single family phase is bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Falmouth line. The applicant is proposing to extend Penn Avenue approximately 500 feet to the west. The applicant is then proposing to build a cross street to connect to property along Vermont Avenue and Jersey Avenue. This subdivision is within the R-3 zone. The lot sizes will range from 10,094 sq. ft. to 84,118 sq. ft. The applicant will need to submit further information required by subdivision ordinance regarding building envelopes, tree preservation, utility capacity, etc. Currently staff is reviewing the submittal for the Penn Avenue Phase.

## **Kansas Avenue**

This 4 lot single family phase is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street. The applicant is proposing to extend Kansas Avenue approximately 250 feet to the west. This subdivision is within the R-3 zone. The lot sizes will range from 15,000 sq. ft. to 58,000 sq. ft. The applicant will need to submit further information required by subdivision ordinance regarding road design, building envelopes, tree preservation, utility capacity, etc. Currently staff is reviewing the submittal for the Kansas Avenue Phase.

### Attachments:

1. Vicinity Map
2. Corporation Counsel's Letter to Applicant's Attorney
3. Wyoming Avenue Stormwater Report
4. Applicant's Request for Sidewalk Waiver along Wyoming Avenue
5. Public Works' Memo dated 5/18/99
6. Letter from Murray, Plumb & Murray dated 7/2/99
7. Development Review Coordinator's Request for Overall Drainage Plan
8. Letter from Staff dated 7/2/99
9. Drainage Analysis
10. Letter from Resident
11. Master Plan
12. Wyoming Avenue Plans
13. Kansas Avenue Plans
14. Penn Avenue Plans
15. Drainage Analysis Plans



**CITY OF PORTLAND, MAINE  
MEMORANDUM**

**TO:** Chair Carroll and Members of the Portland Planning Board

**FROM:** Kandice Talbot, Planner

**DATE:** June 8, 1999

**RE:** 13-lot Subdivision, Vicinity of Penn Avenue  
4-lot Subdivision, Vicinity of Kansas Avenue  
6-lot Subdivision, Vicinity of Wyoming Street

**Introduction**

A & G Associates is requesting workshop review for three single-family subdivisions. These three subdivisions consist of a 13-lot Subdivision within the vicinity of Penn Avenue, a 4-lot subdivision within the vicinity of Kansas Avenue and a 6-lot subdivision within the vicinity of Wyoming Street. A vicinity map is included as Attachment 1. Staff is recommending that the applicant do an overall drainage plan for the area bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth Line. A memo will be available from the DRC discussing the drainage issues in this area.

**Background**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. Corporation Counsel feels that because the applicant is combining lots it would need to be reviewed under the subdivision ordinance, thus requiring Planning Board Review.

**Wyoming Avenue**

This six lot single family subdivision is bounded by Kansas Avenue, Virginia Street, and Racine Avenue. The applicant is proposing to extend Wyoming Avenue approximately 370 feet to the east. The street will include storm drains, sewer, water and underground electric. There is also a small stream that crosses the subdivision. A 30" diameter pipe will be installed to convey the flow of the stream under the road. This subdivision is within the R-3 zone. The lot sizes range from 9,000 sq. ft. to 24,500 sq. ft.

The applicant is proposing sidewalk and granite curb on one side of the street. The applicant is also not proposing any esplanade between the street and the sidewalk. Public Works has reviewed this request and does not object to the construction of a sidewalk on only one side of the street. They would prefer this sidewalk on the northerly side of Wyoming Avenue. Public Works, however, is requiring the applicant to include a four foot wide vegetated esplanade on the northerly side of Wyoming Avenue. Public Works' Memo is included as Attachment 5.

The applicant is proposing that the sites sheetflow to the rear of the properties. The Development Review Coordinator is currently reviewing the subdivision plan.

#### **Penn Avenue**

This 13 lot single family subdivision is bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Palmouth line. The applicant is proposing to extend Penn Avenue approximately 500 feet to the west. The applicant is then proposing to build a cross street to connect to property along Vermont Avenue and Jersey Avenue. This subdivision is within the R-3 zone. The lot sizes will range from 10,094 sq. ft. to 84,118 sq. ft. The applicant will need to submit further information required by subdivision review regarding road design, building envelopes, tree preservation, utility capacity, etc.

#### **Kansas Avenue**

This 4 lot single family subdivision is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street. The applicant is proposing to extend Kansas Avenue approximately 250 feet to the west. This subdivision is within the R-3 zone. The lot sizes will range from 15,000 sq. ft. to 58,000 sq. ft. The applicant will need to submit further information required by subdivision ordinance regarding road design, building envelopes, tree preservation, utility capacity, etc.

All three subdivisions have a number of lots which will have frontage along two streets. The Board may wish to have a condition that states that access will allowed from only one street.

#### Attachments:

1. Vicinity Map
2. Corporation Counsel's Letter to Applicant's Attorney
3. Wyoming Avenue Stormwater Report
4. Applicant's Request for Sidewalk Waiver along Wyoming Avenue
5. Public Works' Memo dated 5/18/99
6. Wyoming Avenue Plans
7. Penn Avenue Plan
8. Kansas Avenue Plan

September 4, 1999

## Poll

Would YOU LIKE TO HAVE A SIDEWALK  
CONSTRUCTED ALONG YOUR FRONT YARD??

<u>Owner</u>	<u>Location</u>	<u>Yes</u>	<u>No</u>
Hanna's	157 11th St		✓
Corn NALLY	171 Virginia	✓	
<del>Michael DeWitt</del>	<del>311 Virginia</del>		✓
<del>Malcolm</del>			✓
Leah	181 Virginia		✓
Lynn Johnson			
Alice Paulsen	121 Virginia St		✓
A.L. Johnson			

AH. 13

# IFW Wildlife Div WRAS Section

IFW Wildlife Div WRAS Section  
650 State Street  
Bangor ME  
04401-5654

Phone: 207-941-4476  
FAX: 207-941-4450  
email: beth.swartz@state.me.us

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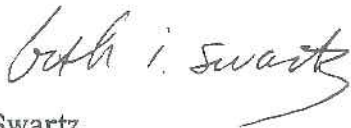
Monday, July 26, 1999

Response to Amy Mulkerin:

**There are no Essential Wildlife Habitats for Endangered or Threatened Species currently designated within the city of Portland.**

**Please note:** Essential Wildlife Habitats have been designated only for bald eagles, least terns, piping plovers, and roseate terns. Locations of other Endangered Species habitats, Significant Wildlife Habitats, rare plants and natural communities, or other important natural resources are not included in an Essential Habitat review. The MDIFW Regional Wildlife Biologist should be contacted if a comprehensive review of resource concerns for the project site is requested.

Sincerely,



Beth Swartz  
Wildlife Biologist  
Endangered Species Program



DELUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

775 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

Attachment 16

## MEMORANDUM

**TO:** Kandi Talbot, Planner

**FROM:** Jim Wendel, PE, Development Review Coordinator

**DATE:** July 20, 1999

**RE:** Site Plan/Subdivision Review  
The Pines

A review of the submission dated July 8, 1999 has been completed. The review included the stormwater analysis and the plans and profiles of the three road extensions. We offer the following comments:

1. No topography was provided for the extension of Penn Avenue. An assessment of upgradient drainage onto Lots 10-12, 16-18 and the short end of the right of way of Penn Avenue and whether easements should exist or other technical observations could not be made. A residential subdivision in Falmouth does drain through this area in some way. How does the stormwater management plan from that subdivision relate to this lot configuration?
2. No recordable subdivision plat has been provided noting the area of the property owned by the applicant with property line data. Will the remaining paper streets and lots be consolidated into one remaining parcel? If that is the case, will the right of ways require the street vacating process?
3. The applicant has made reference to a future extension of Kansas Avenue accessing land along the town line with Falmouth; this layout is not shown on the master plan.
4. The plans should provide the full topography of the various segments of lots that will be created; i.e., Wyoming, Kansas and Penn Avenues. An assessment of potential impacts from upgradient drainage and whether drainage easements are needed can not be made at this time.
5. It appears that some of the right of ways for Penn, Jersey and Vermont Avenues in the Penn Avenue phase 2 could be eliminated and/or reduced in size to easements or pedestrian trail use. What is the street name for the new street between Jersey and Vermont Avenues.
6. Has a wetland evaluation been submitted? The plan notes a partial wetland delineation line. Recommend that the full limits of the wetlands are provided within the applicant's parcel. It is likely that some upland areas may exist within the wetlands that might be able to be reasonably permitted and therefore developed.

DELUCA HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

---

7. Selection of CN values in the stormwater calculations could not be fully understood. We recommend that a brief explanation be provided on how CN values were selected. It is recognized that the area is extensively disturbed and engineering judgment is needed.
8. The lengths of reach segments 101 and 103 seem excessively short.
9. The length of reach segment 105 as it relates to segment 107 is not clear. It appears that segments 105 and 107 should be routed together into another reach with a length of 1400'; this would take the flow into the pond at the same point as reach 104.
10. Review of plans and aerial mapping available in the City archives indicates that about 1/3 of subcatchment 24 does not drain to this watershed.
11. Review of plans and aerial mapping available in the City archives indicates that about 1/2 of subcatchment 22 does not drain to "pond 3" in the analysis; it drain to the corner of Nevada and Virginia Avenues, and then into the wetland area. Also, a portion of this subcatchment does not drain to this watershed.
12. Subcatchments 20 and 31 in the existing conditions should be based on actual contour limits; existing aerial mapping available from the City will provide appropriate detail to define this area and the areas noted in 9 and 10 above.
13. Subcatchment 5, in Falmouth, has a subdivision currently under construction; we recommend that the design of this subdivision be assimilated into this analysis.
14. We recommend that a full boundary survey of the parcel be provided.

Should you have any questions, please call.

1359.70-memo7-20

From: <jcb@mpmlaw.com>  
To: Portland.CityHall(PL)  
Date: Thu, Jul 22, 1999 12:18 PM  
Subject: FW: Site Location Question

[[ ENVELOPE.TXT : 3887 in ENVELOPE.TXT ]]

-----Original Message-----

From: Marybeth.Richardson@state.me.u [mailto:PC @INTERNET {Marybeth.Richardson@state.me.us}]  
Sent: Thursday, July 22, 1999 8:39 AM  
To: JCB, John C. Bannon  
Subject: RE: Site Location Question

-----  
--

Yes, you are correct.

-----Original Message-----

From: jcb@mpmlaw.com [mailto:jcb@mpmlaw.com]  
Sent: Thursday, July 22, 1999 7:55 AM  
To: Richardson, Marybeth  
Subject: RE: Site Location Question

Marybeth:

Thank you for your incredibly fast response.

I think your response answers my question, but I want to make sure I understand you: are you saying that I am correct in my interpretation that the "common scheme of development" concept does not override the last paragraph under the definition of subdivision, which refers to parcels separated by a road, etc.?

Thanks!

John C. Bannon

> -----Original Message-----

> From: Marybeth.Richardson@state.me.u [mailto:PC @INTERNET {Marybeth.Richardson@state.me.us}]  
> Sent: Thursday, July 22, 1999 7:54 AM  
> To: JCB, John C. Bannon  
> Subject: RE: Site Location Question

>  
>  
>  
> -----  
> -----

- > I've heard this one before. See the last paragraph under the
- > definition
- > of "subdivision" (subsection 5). It says "For the purposes of this
- > subsection only, a parcel of land is defined as all
- > contiguous land in
- > the same ownership provided that lands located on opposite
- > sides of a
- > public or private road are considered each a separate parcel
- > of land
- > unless that road was established by the owner of the land on
- > both sides
- > of the road subsequent to January 1, 1970."
- >
- > Does that answer your question?
- >
- > -----Original Message-----
- > From: jcb@mpmlaw.com [mailto:jcb@mpmlaw.com]
- > Sent: Wednesday, July 21, 1999 5:13 PM
- > To: Richardson, Marybeth
- > Subject: Site Location Question
- >
- >
- > Marybeth:
- >
- > I left a somewhat incoherent question in your voicemail about the
- > interpretation of "subdivision" under the Site Location Law.
- > So, here's
- > an incoherent e-mail to go with it:
- >
- > Certain (nonlegal) personnel at the City of Portland assert that,
- > although the definition of "parcel" treats blocks as separate
- > if they are
- > separated by a public or private road, that separation
- > disappears if the
- > developments on either side of the road are considered part
- > of a "common
- > scheme of development."
- >
- > As I read the regs, the "common scheme of development" concept would
- > never override the principle that parcels that are separated
- > by a public
- > or private road are treated as separate "parcels."
- >
- > In my client's case, we are proposing to subdivide about 22
- > acres (with
- > fewer than 15 lots) on one side of a public street in
- > Portland, and about
- > 12 acres (with fewer than 15 lots) on the other side of the public
- > street. Because on neither side of the street is there a subdivision
- > measuring at least 30 acres and at least 15 lots, I interpret the regs
- > and Site Law as providing that neither development would require Site
- > Location review.
- >
- > The City, on the other hand, thinks that because both
- > developments taken
- > together would meet the definition of a "common scheme of



- > development,"
- > there is a single "subdivision" of 34 acres and containing
- > more than 15
- > lots, that would require Site Location review regardless of the public
- > road.
- >
- > In my view, under the City's interpretation, the regulatory
- > definition of
- > a "parcel," which treats parcels as separate if they are divided by a
- > road, would be nullified. Simultaneous development on either
- > side of a
- > road will almost always satisfy the definition of a "common scheme of
- > development." If the "common scheme" concept took precedence, then
- > parcels divided by a public road would not be considered
- > separate parcels
- > -- contrary to the plain meaning of the statute and regs.
- >
- > What do you think?
- >
- > Thank you!
- >
- > John C. Bannon
- >
- >



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

AH. 18

Regulatory Branch  
CENAE-CO-R-51

September 28, 1998

A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Gentlemen:

This letter concerns your development of a residential subdivision(s) off Virginia Street at Portland, Maine. I would like to explain Corps of Engineers jurisdiction and to insure that you do not perform any filling in wetlands or waters under Corps jurisdiction without first obtaining the necessary permits.

As you are no doubt aware, our regulatory jurisdiction in this area encompasses all activities involving the discharge of dredged or fill material below the ordinary high water mark in all waters of the United States. Waters of the United States include navigable waters, inland rivers, lakes and streams and their adjacent wetlands, and isolated wetlands.

The construction of Penn Street Extension and its crossing of an unnamed stream and adjacent wetland required a Corps permit. However, since less than 4300 square feet of wetland was filled for the crossing, this activity qualified for the non-reporting category of our Maine Programmatic General Permit (attached). I should note however, that our site visit revealed that you still need to install the 4'x 6' concrete box culvert referenced in your DEP application as soon as possible to minimize impacts to the stream.

We understand from the DEP that although the subdivision plan depicts lots in wetlands, you no longer propose the development of those lots. Only lots containing sufficient developable uplands will be developed. I believe that was a wise decision. You should be aware for future reference that the Corps does not generally permit the development of lots which are all or largely wetland. I recommend that you clearly identify all wetland boundaries on site and on your plans so that contractors and future homeowners are aware of these restrictions and do not find themselves in an enforcement situation.

We also understand from a concerned neighbor that you may pursue similar developments on the "paper streets" to the northeast. I **strongly** suggest that you schedule a meeting as soon as possible with us and the DEP to discuss your plans. It is in all of our interests to avoid piecemealing. Developing a comprehensive application avoids and minimizes wetland and waterway impacts to the maximum extent possible and reduces regulatory burdens on you.

I must point out that violations of the Clean Water Act are punishable by civil and/or criminal fines up to \$25,000 per day of violation (up to \$50,000 per day for criminal fines) and possible imprisonment. In addition, any unauthorized work or fill is subject to complete removal and restoration.

Should you have any questions, please contact me at 207-623-8367 at our Manchester, Maine Project Office.

Sincerely,

  
Jay L. Clement  
Project Manager  
Maine Project Office

Copies Furnished:  
Office of Environ. Stewardship - USEPA  
Mike Clark/Dawn Hallowell - MEDEP  
Planning Dept. - City of Portland  
Jeffrey Langholtz

AH. 19

July 21, 1999

9 Charlotte Drive  
Falmouth, ME 04105

Ms. Penny Littell  
Associate Corporation Counsel  
Legal Department  
Portland City Hall  
389 Congress Street  
Portland, ME 04101

JUL 22 1999

2:00 p.m.

**RE: The Pines of Portland/  
Pennsylvania Avenue Subdivision  
North Deering  
Portland, ME**

Dear Ms. Lettell:

On July 13, 1999, I attended a Planning Board Workshop regarding the above referenced project. Upon review of the information provided to the attendees at the workshop (copy enclosed), it became apparent that the proposed development would have direct and significant impacts to abutters located in the town of Falmouth.

Subsequent to the workshop, I consulted with residents who currently reside in the Ledgewood Heights subdivision, located in Falmouth, Maine. Of all those contacted, none had received written or verbal notice of this proposed development. Considering this proposed action has the potential to change the complexion of the entire Ledgewood Heights subdivision, and significantly alter the landscape adjacent to several abutters, I question why suitable notification was not provided. I believe that the onus is on the proponent, as well as the city of Portland, to ensure all affected parties, especially abutters, are made fully aware of all such development impacts.

I question the legality of not providing proper and adequate notification in this regard, and request the city of Portland review this practice before acting on the proposed development. If legal precedence has been previously established regarding abutters in adjacent towns, then the conscious decision not to inform such abutters becomes a topic in ethics, and should be addressed by city council.

Thank you for your attention to this matter, and I look forward to your response.

Sincerely,

  
David C. Dargie, P.E.

Enclosures

cc: G. Thebarge, Falmouth Town Planner

LSM(7-21-99)

196

July 22, 1999

9 Charlotte Drive  
Falmouth, ME 04105  
(207) 797-2084

Mr. Joseph E. Gray, Jr.  
Director of Planning and Urban Development  
City Hall, 4<sup>th</sup> Floor  
389 Congress Street  
Portland, ME 04101

**RE: The Pines of Portland/  
Pennsylvania Avenue Subdivision  
North Deering  
Portland, ME**

Dear Mr. Gray:

I currently reside on Charlotte Drive in Falmouth, Maine, in a subdivision known as Ledgewood Heights. I also own an adjoining parcel of land located in the city of Portland. Consequently, I recently received notification of a Planning Board Workshop to be held on July 13, 1999, which I chose to attend. Upon review of the information provided to the attendees at the workshop (copy enclosed), it became apparent that the proposed development would have direct and significant impacts to abutters located in the Ledgewood Heights subdivision.

Subsequent to the workshop, I consulted with my neighbors. None of them had been informed either verbally or in writing regarding this proposed development, or the workshop itself. I question the legality of not providing notification to direct abutters of a proposed development, even if the abutters reside in an adjacent town. If it is indeed true that there is no legal requirement to notify abutters in adjacent communities, then I question the ethics of this practice.

In retrospect, it has become apparent that the only reason I received notice of the July 13th Planning Board workshop, is due to my ownership of land within the city of Portland limits. However, there are several residents located within the Ledgewood Heights subdivision who will be directly impacted by the proposed development. Yet, these individuals have had no opportunity to ask questions, make comments, or voice their concerns regarding the changes that are proposed to take place in their backyards. This simply is not fair or proper, and I request that all affected parties be afforded the opportunity to review and comment on the proposed action with adequate notification. In short, I request that Planning Board action regarding the proposed development be postponed until all appropriate parties are properly notified, and are given the opportunity to respond.

A second area of concern regarding the proposed development is that of stormwater. A significant amount of stormwater runoff in the Ledgewood Heights subdivision is collected in a detention basin located on the Portland/Falmouth boundary. This detention basin discharges in the approximate location of the proponent's lot #18. However, it appears that no provisions have been made to channel or treat this discharge once it crosses the town boundary into Portland. The proponent must take the necessary steps to properly and adequately control and treat this runoff as it takes its natural course through the proposed development area. Furthermore, it is unclear to me if the runoff from Ledgewood Heights was included as part of the drainage calculations. If not, then the proponent's stormwater analysis should be revised.

A separate, but equally important concern, is that the majority of the watershed in this area flows southerly off the area of proposed development via a small stream. During significant storm events, this stream overflows its shallow banks and saturates the adjacent fields and woodlands that lie down gradient. On many instances, I have walked through these areas after substantial rainfalls to observe large areas of standing water and ground saturation.

Further down gradient, this small stream crosses over the Falmouth town line via a culvert under Ledgewood Drive adjacent to O'Donovan's Complete Maintenance, Inc. During periods of significant storm events, the culvert beneath Ledgewood Drive flows at capacity. In addition, the runoff passing through this small stream both above and below this culvert shows visible signs of siltation during peak discharge. Adding additional runoff to the watershed will only further exacerbate this situation. Furthermore, it appears that the culvert beneath Ledgewood Drive was not considered as part of the stormwater analysis.

The proponent indicated that the proposed development "will not have a detrimental affect on down stream properties from the drainage passing through this site." However, the construction of impervious surfaces such as roads, sidewalks, driveways, and patios, as well as roofs of buildings and sheds, will most certainly result in increased offsite runoff. Yet, it appears that no provisions have been made to detain such runoff on site to either control peak discharge, or reduce the presence of suspended solids. In short, I question the methodology that was utilized by the proponent to reach the conclusions outlined in the stormwater analysis.

Over the past six years five separate subdivisions have been developed off of Ledgewood Drive in Falmouth. Each one of these subdivisions ultimately discharge into the same watershed as the proposed development area, and each one of these subdivisions have huge stormwater detention basins. Yet, the proposed project does not. Therefore, I request that the Planning Board require a peer review of the engineering plans and backup documentation to reach a final conclusion on this matter.

My third item of concern is that of wildlife habitat. As the city of Portland and its surrounding communities continues to grow, open space for wildlife is gradually eroded away. The woodlands and meadows proposed for development provide favorable habitat for a wide variety of animals and birds. I routinely spot deer in these areas, and believe that this wildlife corridor that follows

19d

the Portland/Falmouth line is one of the last habitats capable of supporting deer this close to the heart of downtown Portland. In short, I am hopeful that provisions will be considered to provide suitable egress and habitat for all forms of wildlife that call the proponent's parcel and surrounding areas home.

Thank you for your consideration of the above. If you have any questions, feel free to call me.

Sincerely,

  
David C. Dargie, P.E.

Enclosure

cc: Kandice Talbot, Planner, City of Portland ✓

19e

JEFFREY W. LANGHOLTZ  
ATTORNEY AT LAW  
260 MAIN STREET, SUITE G  
BIDDEFORD, MAINE 04005  
(207) 283-4744 FAX (207) 283-1349  
E-mail: jwl@gwi.net www.maineattorney.com

July 22, 1999

Joseph Gray  
Director of Planning and Urban Development,  
City Hall  
389 Congress Street  
Portland, ME 04101

Dear Mr. Gray and Planning Board Members:

My wife and I have lived at 141 Virginia Street for approximately 10 years. Over time the traffic on Virginia Street has increased substantially due to new development in the area. Many families on Virginia Street and the other surrounding streets have young children and animals.

The proposed Pines subdivision will significantly increase the traffic in the area. Cars already regularly speed down Virginia street to avoid the congestion on Washington Avenue. Virginia Street is losing it residential quality; it is becoming an overused through street. The problems associated with high traffic will be exacerbated if you decide to approve the subdivision as proposed.

The quality of life on Virginia Street has taken a turn for the worse over the years. My wife and I are now afraid that ours two dogs will be killed if they inadvertently stray onto the street. We are concerned that the value of our property will decrease if the overuse of our street continues to accelerate.

It is inappropriate to allow Virginia Street to bear the complete impact of the 29 lot subdivision. It would be more reasonable for the Board to approve the original Pines proposal of 15 lots. A&G will be able to realize a respectable return on their investment with a 15 lot subdivision considering that they paid less than \$80,000.00 for a large parcel of City land in a prime location.

There was some discussion at the 7/13/99 workshop session of building a road into Falmouth to alleviate the potential impact on Virginia Street. I was troubled to hear a board member express his concern that the owners of the "expensive" homes in Falmouth would be unhappy with a street abutting their



19f

Joseph Gray  
Page 2  
July 22, 1998

There was some discussion at the 7/13/99 workshop session of building a road into Falmouth to alleviate the potential impact on Virginia Street. I was troubled to hear a board member express his concern that the owners of the "expensive" homes in Falmouth would be unhappy with a street abutting their properties. I do not believe that same board member indicated concern for the sentiments of the working class individuals living in the moderately priced homes on Virginia Street and surrounding area.

Prior to becoming a lawyer I worked in the building trades for three years; I sympathize with the interests of developers. However, in this matter I believe that A&G is about to embark on project which will adversely impact a my neighborhood. In addition the proposed development will adversely impact a valuable wetland resource and wildlife habitat. Responsible development of this site would include upland buffers and wildlife corridors.

However, A&G intends to develop all upland sites. At the workshop their expressed interest in the environment seemed disingenuous because they seem intent on developing all areas not expressly forbidden by law ( attached as Exhibit A is a letter from Jay L. Clement, Department of the Army, Corps of Engineers to A& G Associates dated 9/28/98). If A&G were truly concerned about preserving the valuable resource about to be destroyed they would preserve significant upland areas.

A&G already has filled a portion of the wetland to allow for the completed construction of the six homes on the Penn Street extension (attached as Exhibit B is Jay Clement's note to Jeffrey Langholtz dated 12/17/98 along with attachments addressing the Penn Street Extension fill) Filling so close to a perennial stream would have been forbidden by the Portland City Code and City of Portland Technical and Design Standards and Guidelines. Additionally A&G's initial and potentially ongoing claim that the Board does not have jurisdiction over their proposed subdivision is indicative of their lack of concern for the environment and residents of the neighborhood.

Pursuant to Section 14-497(5) of the Portland Code the Board shall determine that the proposed subdivision " will not cause unreasonable high or public road congestion or unsafe conditions with respect to the use of the highway or public roads existing or proposed." The applicant A&G has failed to provide evidence addressing the 14-497(5) issue. A&G bears the burden of convincing the Board that

Joseph Gray  
Page 3  
July 22, 1998

the subdivision will not cause unreasonable congestion or unsafe conditions. Considering the overuse of Virginia Street presently the subdivision as proposed will not comply with section 14-497(5)

It is not apparent from the master plan whether all the wetlands have been appropriately delineated. According to the City of Portland Technical & Design Standards & Guidelines, Section XI (3)(A) " all wetlands should be delineated and mapped according to the Federal Manual for Jurisdictional Wetlands." The applicant failed to provide the Board with the information as required in Section XI(3)(A). Section XI (4)(A) also mandates that in order to avoid wetland impact " A topographic map with wetlands delineated according to the Federal Manual for Jurisdictional Wetlands" will be submitted as part of the application.

The applicant has failed to show that its plan complies with Section XI(3)(A)(a); applicant submissions relative to wetland buffer strips are absent. Issues concerning perennial and intermittent streams are unaddressed. According to the Standards and Guidelines the applicant shall provide undisturbed wetland buffers. Those "undisturbed buffer[s] must be placed in deed restrictions." Pursuant to 14-497(a)(8) The Board must determine the subdivision "will not have an undue adverse effect on the scenic or natural beauty of the area." This issue was never discussed at the 7/13/98 workshop and the applicant failed to address the matter in its application.

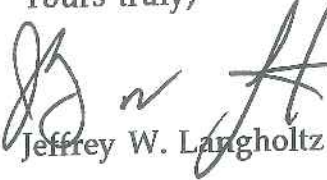
The 20 plus acre site which constitutes the proposed subdivision is a unique and beautiful area supporting a wide variety of wildlife. There are very few remaining undisturbed marsh grass and perennial pond areas in our City. Over development of this area as proposed by A&G will adversely impact its natural and scenic beauty.

For the reasons discussed above please deny the Pines Subdivision Application in its present form. Thank you for your consideration.

19h

Joseph Gray  
Page 4  
July 22, 1998

Yours truly,



Jeffrey W. Langholtz

attachments

cc:

Penny Littell, Associate Corporation Counsel  
Residents of Virginia Street  
Editor, Casco Bay Weekly  
Editor, Portland Press Herald



REPLY TO  
ATTENTION OF

Regulatory Branch  
CENAE-CO-R-51

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751



September 28, 1998

A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Gentlemen:

This letter concerns your development of a residential subdivision(s) off Virginia Street at Portland, Maine. I would like to explain Corps of Engineers jurisdiction and to insure that you do not perform any filling in wetlands or waters under Corps jurisdiction without first obtaining the necessary permits.

As you are no doubt aware, our regulatory jurisdiction in this area encompasses all activities involving the discharge of dredged or fill material below the ordinary high water mark in all waters of the United States. Waters of the United States include navigable waters, inland rivers, lakes and streams and their adjacent wetlands, and isolated wetlands.

The construction of Penn Street Extension and its crossing of an unnamed stream and adjacent wetland required a Corps permit. However, since less than 4300 square feet of wetland was filled for the crossing, this activity qualified for the non-reporting category of our Maine Programmatic General Permit (attached). I should note however, that our site visit revealed that you still need to install the 4'x 6' concrete box culvert referenced in your DEP application as soon as possible to minimize impacts to the stream.

We understand from the DEP that although the subdivision plan depicts lots in wetlands, you no longer propose the development of those lots. Only lots containing sufficient developable uplands will be developed. I believe that was a wise decision. You should be aware for future reference that the Corps does not generally permit the development of lots which are all or largely wetland. I recommend that you clearly identify all wetland boundaries on site and on your plans so that contractors and future homeowners are aware of these restrictions and do not find themselves in an enforcement situation.


19j

We also understand from a concerned neighbor that you may pursue similar developments on the "paper streets" to the northeast. I **strongly** suggest that you schedule a meeting as soon as possible with us and the DEP to discuss your plans. It is in all of our interests to avoid piecemealing. Developing a comprehensive application avoids and minimizes wetland and waterway impacts to the maximum extent possible and reduces regulatory burdens on you.

I must point out that violations of the Clean Water Act are punishable by civil and/or criminal fines up to \$25,000 per day of violation (up to \$50,000 per day for criminal fines) and possible imprisonment. In addition, any unauthorized work or fill is subject to complete removal and restoration.

Should you have any questions, please contact me at 207-623-8367 at our Manchester, Maine Project Office.

Sincerely,

  
Jay L. Clement  
Project Manager  
Maine Project Office

Copies Furnished:  
Office of Environ. Stewardship - USEPA  
Mike Clark/Dawn Hallowell - MEDEP  
Planning Dept. - City of Portland  
Jeffrey Langholtz

19K



Jeff:

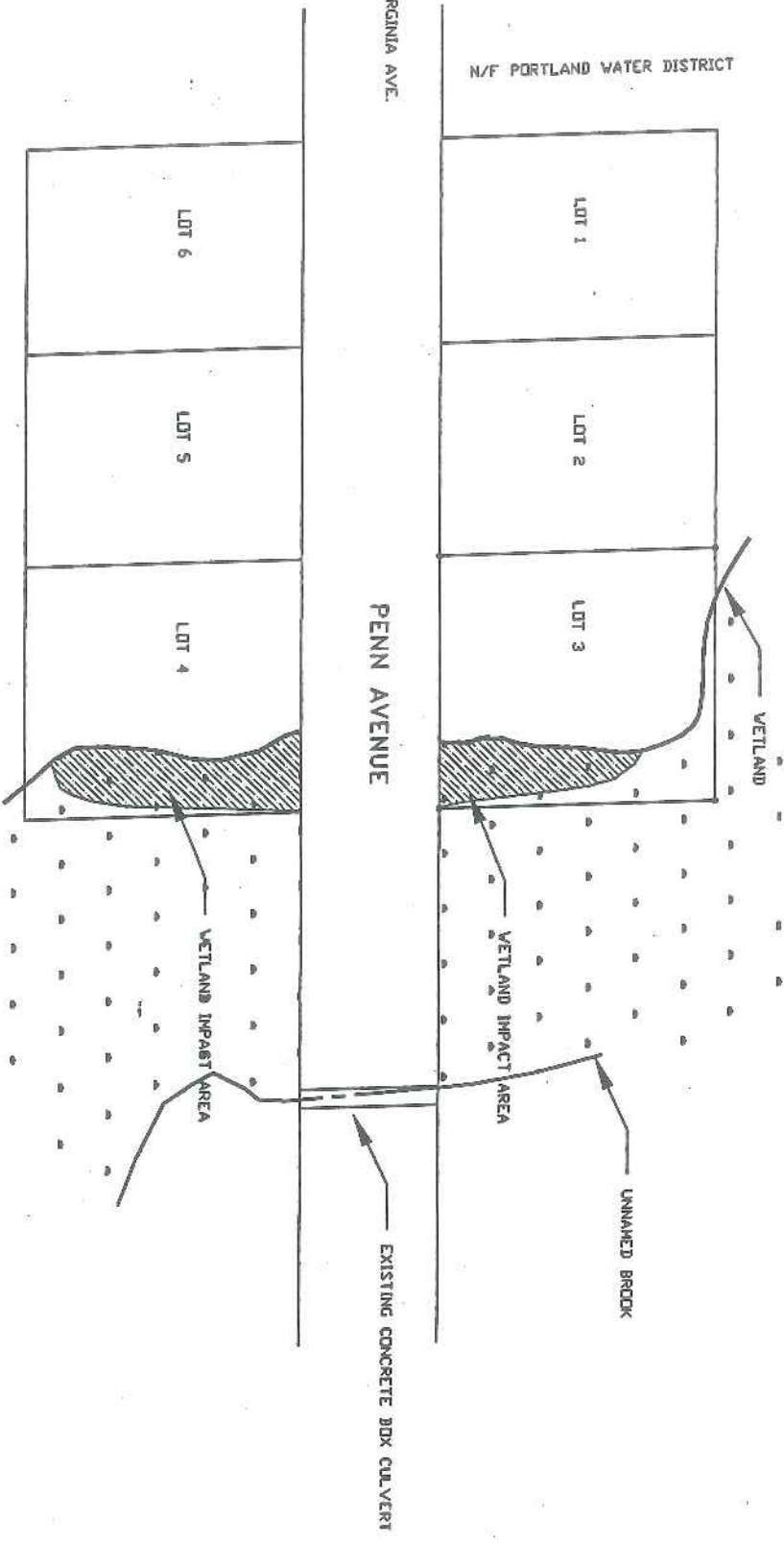
12/17/98

As discussed. The first sheet is the permitted development. The second is a field sketch of the extent of wetlands. A+G's consultant, Pinkham + Greer out of Falmouth, is working on a comprehensive proposal.  
Keep in touch!

192

TO VIRGINIA AVE.

N/F PORTLAND WATER DISTRICT



NOTE: AREA OF WETLAND IMPACT  
2924 SQUARE FEET



# WETLAND IMPACT AREAS

DATE: NOVEMBER 1998

PROJECT: 98113

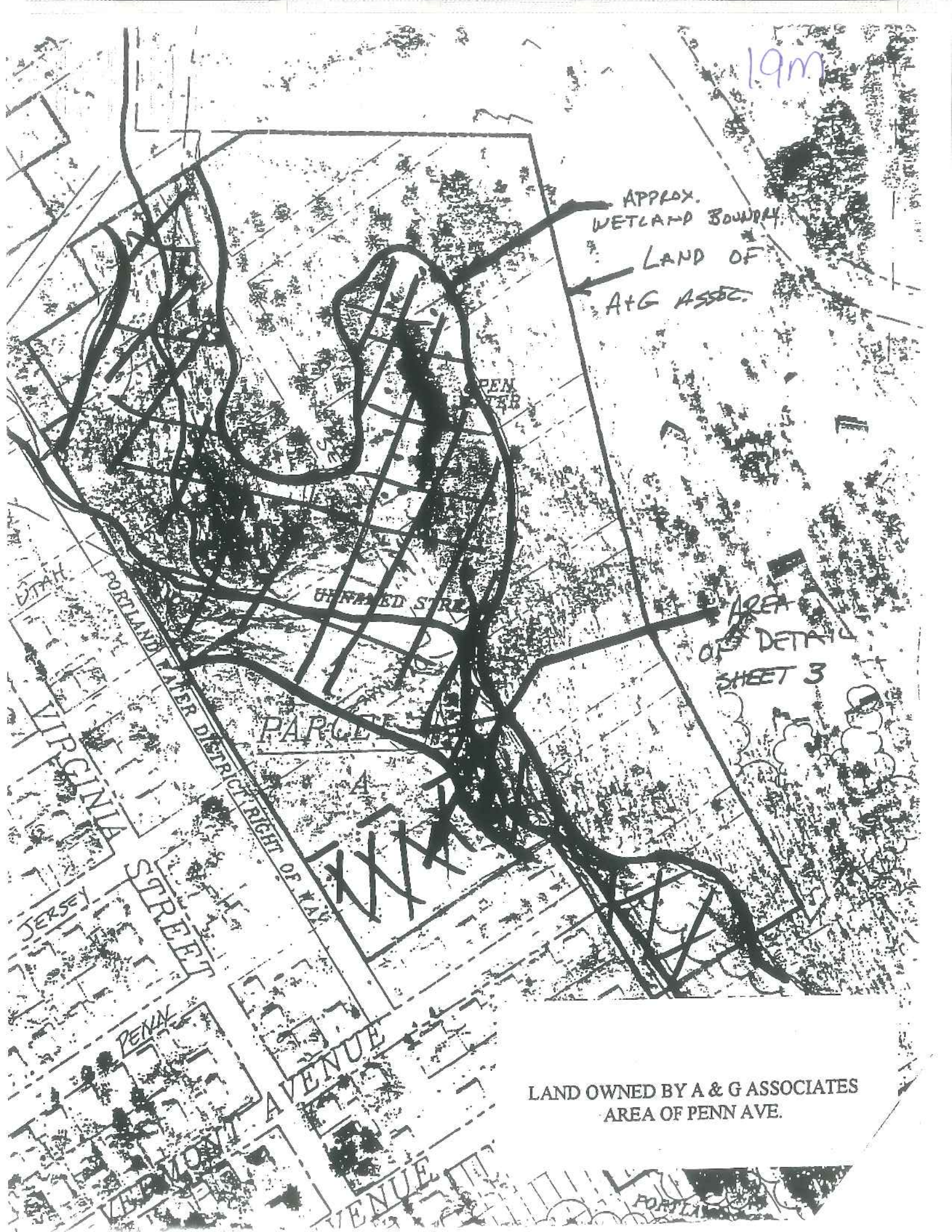
A & G ASSOCIATES  
PORTLAND, MAINE  
PENN AVENUE  
PORTLAND, CUMBERLAND COUNTY, MAINE

19m

APPROX.  
WETLAND BOUNDARY  
LAND OF  
A+G ASSOC.

AREA  
OF DETAIL  
SHEET 3

LAND OWNED BY A & G ASSOCIATES  
AREA OF PENN AVE.





19n

(4) *Vacation of plats.* Any such plat recorded, or any portion thereof, may be vacated with the consent of the city council as follows:

- a. At any time before the sale of any lot therein, by written instrument, signed by the city and the owners of such subdivision, declaring the same to be vacated and describing therein the part or portion to be so vacated.
- b. At any time after the sale of any lot therein and by written instrument, signed by the city and all owners of record of lots shown on the plat, declaring the same to be vacated and describing therein the part or portion to be so vacated.

Any instrument so executed vacating all or a portion of any plat shall be duly filed and recorded in the county registry of deeds. The execution and recording of the instrument described in subsection (4)b. above shall vest fee simple title to the centerline of the street, alley or easement for public passage so vacated in the owners of abutting properties. Title to property located within the vacated streets, alleys or easements for public passage shall pass to abutting property owners free and clear of any rights of the public or other owners of lots shown in the plan, but subject to the rights of the owners of any public utility installations which have been previously erected therein.

(Code 1968, § 603.7; Ord. No. 158-68, § 10, 5-6-68; Ord. No. 149-79, 6-6-79; Ord. No. 127-87, §§ 5, [12], 2-18-87; Ord. No. 95-88, §§ 1, 2, 7-19-88; Ord. No. 155-89, § 5, 11-20-89; Ord. No. 177-93, §§ 1, 2, 1-4-93; Ord. No. 165-97, 1-6-97)

**Editor's note**—Ord. No. 95-88, adopted July 19, 1988, amended subsections (2) and (3) of this section to read as herein set out. See also the editor's note to Art. III of this chapter for additional provisions relative to Ord. No. 95-88.

**Sec. 14-497. General requirements.**

(a) *Review criteria.* When reviewing any subdivision for approval, the planning board shall consider, among others, the following review criteria and before granting approval shall determine that the proposed subdivision:

- (1) Will not result in undue water or air pollution. In making this determination it shall at least consider the elevation of land above sea level and its relation to the flood plains, the nature of soils and subsoils and their ability to adequately support waste disposal; the slope of the land and its effect on effluents; the availability of streams for disposal of effluents; the conformity to the applicable state and local health and water resources regulations;
- (2) Has sufficient water available for the reasonably foreseeable needs of the subdivision;
- (3) Will not cause unreasonable burden on an existing water supply;
- (4) Will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result;
- (5) Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highway or public roads existing or proposed;
- (6) Will provide for adequate sanitary waste and storm water disposal and will not cause an unreasonable burden on municipal services if they are utilized;

- (7) Will not cause an unreasonable burden on the ability of the city to dispose of solid waste and sewage if municipal services are to be utilized;
  - (8) Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the department of inland fisheries and wildlife or by the city, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline. For subdivisions within historic districts designated pursuant to article IX of this chapter, the planning board shall apply the standards of section 14-651(3) of article IX. The planning board may request that the historic preservation committee prepare an evaluation of the proposed subdivision based upon the standards of section 14-651(3);
  - (9) Is in conformance with the land development plan or its successor;
  - (10) The subdivider has adequate financial and technical capacity to meet the standards of this section;
  - (11) Whenever situated, in whole or in part, within the watershed of any pond or lake or within two hundred fifty (250) feet of any wetland, great pond or river as defined in Title 38, chapter 3, subchapter I, article 2-B, will not adversely affect the quality of such body of water or unreasonably affect the shoreline of such body of water;
  - (12) Will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater;
  - (13) Is or is not in a flood-prone area, based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and information presented by the applicant. If the subdivision, or any part of it, is in such an area, the subdivider shall determine the 100-year flood elevation and flood hazard boundaries within the subdivision. The proposed subdivision plan must include a condition of plan approval requiring that principal structures in the subdivision will be constructed with their lowest floor, including the basement, at least one (1) foot above the 100-year flood elevation;
  - (14) All potential wetlands within the proposed subdivision shall be identified on any maps submitted as part of the application, regardless of the size of those wetlands. Any mapping of wetlands may be done with the help of the local soil and water conservation district; and
  - (15) Any river, stream or brook within or abutting the proposed subdivision shall be identified on any maps submitted as part of the application. For purposes of this section, "river, stream or brook" has the same meaning as in Title 38 M.R.S.A. Section 480-B, subsection 9.
- (b) *Burden of proof.* In all instances the burden of proof shall rest upon the person proposing the subdivision.
- (c) *Conformity with Code.* Any proposed subdivision shall be in conformity with all relevant provisions of this Code.
- (d) *Reserved.*

**OFFICE COPY**

19p

# **CITY OF PORTLAND, MAINE**



## **TECHNICAL AND DESIGN STANDARDS AND GUIDELINES**

Adopted: September 1987  
Amended: August 1992  
July 1994

199

## SECTION XI

### STANDARDS FOR DEVELOPMENT IN AND ADJACENT TO WETLANDS

#### 1. INTENTION

These standards are intended to minimize adverse effects upon wetlands and protect wildlife habitat and fisheries.

#### 2. APPLICABILITY

All projects which may impact wetlands as defined by the Shoreland Zoning Ordinance or are classified as a river, stream or brook as defined by the Natural Resources Protection Act are subject to these standards. Some wetlands which may not be regulated by the City of Portland may be regulated under State and Federal law.

#### 3. STANDARDS

- A. All wetlands should be delineated and mapped according to the Federal Manual for Jurisdictional Wetlands (the most recently updated version.)
- B. Maine State Jurisdictional Wetlands and wetlands as defined by the Shoreland Zoning Ordinance (hereafter referred to as wetlands) should be identified according to the Natural Resources Protection Act (Title 38 M.R.S.A. Section 480-B) and identified on a map.
- C. Design the development to minimize wetland impacts by either avoiding direct wetland impacts or following the specific design criteria below:
  - (a) The Development should be designed to avoid disturbance in wetlands and the developer must establish undisturbed buffer strips from the wetland boundary. For developments located adjacent to perennial streams, a minimum one hundred (100) foot buffer strip on either side of the stream should be maintained. For intermittent streams, the buffer strip may be reduced to twenty five (25) feet. The undisturbed buffer must be placed in deed restrictions. In cases where State and Local rules are in conflict, the most stringent rules will apply.
  - (b) If any filling, clearing or alteration will occur in wetlands, then the wetlands must be classified according to the Wetland Protection Rules as Class I, Class II, or Class III. The guidelines of Avoidance, Minimal Alteration, and Compensation contained in the rules shall apply.

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## SECTION XI – STANDARDS FOR DEVELOPMENT IN AND ADJACENT TO WETLANDS

- (1) No disturbance in Class I wetlands and a 35 foot undisturbed buffer zone shall be established from the wetland boundary that will be specified in deed restrictions.
- (2) Limited fill may be used in Class III wetlands for road crossings to reach upland sites and for weir construction. Fill is limited to 20,000 square feet for the entire project site.
- (3) Road crossings of wetlands will have level culverts placed every 50 feet.
- (4) In Class II and Class III, alteration of wetlands for a road or utility line crossing of a stream for a distance of up to 100 feet from the normal high water line on both sides, measured perpendicular to the thread of the stream. This is inclusive of the 20,000 square foot fill limitations.

### 4. SUBMISSIONS

The following submissions will support the contention that wetland impacts have been avoided:

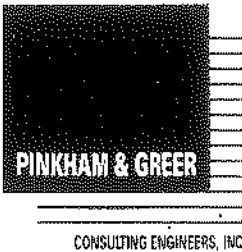
- A. A topographic map with wetlands delineated according to the Federal Manual for Jurisdictional Wetlands (the most updated version). State of Maine Jurisdictional Wetlands will be identified according to the Natural Resources Protection Act on the same map. The scale should be 1 inch equals 100 feet.
- B. A site plan that shows all development activity including lots, common areas, roads, driveways, and building windows in conjunction with wetlands.
- C. If any filling is proposed:
  - (a) The classification must be determined according to the Wetland Protection Rules and clearly marked on the wetlands map.
  - (b) A report that describes the basis for the wetlands classification determination.
  - (c) Areas of wetland fill must be clearly marked and individually identified on the site plan.
  - (d) A report that contains surface area amounts of wetland fill for the individually identified fill locations.

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## SECTION XI – STANDARDS FOR DEVELOPMENT IN AND ADJACENT TO WETLANDS

- D. A letter from the Department of Inland Fisheries and Wildlife indicating the wetlands on the site contain no significant or valuable wildlife habitat.
- E. A letter of non-jurisdiction, a copy of permits received from other regulatory agencies (i.e. Maine Department of Environmental Protection of the U.S. Army Corps of Engineers) or report from a qualified professional stating that the proposed work will not require a permit from state or local agencies must be submitted for all projects proposing work either in or adjacent to wetlands prior to issuance of a building permit. This includes wetlands not regulated by the City of Portland.

Adopted by the Planning Board 8/11/92.



AH 20

170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

July 23, 1999  
File: 99102

Ms. Kandi Talbot, Planner  
CITY OF PORTLAND  
389 Congress Street  
Portland, ME 04101

RE: RESPONSE TO 7/20/99 MEMO, J. WENDEL  
THE PINES BY A & G ASSOCIATES

Dear Kandi:

Below are responses to the items that Jim Wendel noted in his 7/20 memo.

1. The area above Lots 10-12 and 16-18 generally drains from Falmouth through these lots. On the north end between Lots 10 and 12 there is a concentrated flow that will be accommodated by shaping and grading the turn-a-round. The remaining will be drained along the edges of the lots to the cross street as in common with other City projects. These will be defined as part of the minor site plan review of each home as is the City's standard practice, see note on the subdivision plan.
2. Survey, Inc. is preparing recordable subdivision plans for each project. These are transmitted to you under a separate cover. The remaining lots that are owned by A & G do not include the paper streets. We do not need to go through the vacating process at this time.
3. The land along the Falmouth line is shown as future development area. We have no specific plans at this time as to a development configuration.
4. The topography has been added to the subdivision plans. As with Item 1, each lot will have a minor site plan review for grading and drainage.
5. As with Item 2 above, the City owns the rights-of-way, so reducing them in size would require vacating the streets. We do not need to go through that process at this time. We have not selected a street name for the cross street at this time but will submit it to the City for approval shortly.

6. The wetlands have been delineated on the Master Plan. There may be some small upland islands around the pond but at this time are considered too small to delineate separately. A report was completed and submitted with the permit application for the project. We recognize the need to have any permits in place for wetland impacts and will continue to file permits with the DEP as necessary.
7. The curve numbers were based on a board overview of the soils and the existing land use. The County Soils were listed for each catchment area with the hydrologic soils group, see hand written sheet submitted with the drainage calculations. The majority of this section of Portland is developed with  $\frac{1}{4}$  acre lots so the curve numbers 61 for A soils to 87 for D soils was referenced. Much of the area has C/D soils so CN 85 was selected. For Catchment 40, in Falmouth, the area is less developed so a lower CN was selected.

In general, I have tried to accurately select CN that make sense and with  $T_c$  paths that generate flows that appear correct. As with all drainage analysis the change in curve numbers is more important than the number itself. The project areas, Catchments 26 and 36 change from 78 in the existing conditions to 85 in the proposed condition. This, in my opinion, was a conservative approach to account for the current development and include future development as well. It is unlikely the entire A & G holdings will be  $\frac{1}{4}$  acre house lots, much of the area will remain undeveloped.

8. The length of 10 and 103 were kept short by design. During heavy flows, ponding occurs back towards these reaches effectively reducing their length. I believe this approach reduces the travel time in the analysis and better predicts actual conditions. We have revised the catchment areas and shown 101 on the new drawing. It is 300' from the culvert to the closed contour on the drawing. This area would be the beginning of Pond 3.
9. Reach 107 and 105 are placed one after the other to account for the change in slope. 107 uses a 5% gradient from Ledgewood to the stream, Reach 105. Based on my field observation, Reach 105 is very flat so a 0.5% slope was used. There is a short section where 104 and 105 are combined and could be added together. This approach does not change the flow reaching the pond.





CONSULTING ENGINEERS, INC.  
10. 11. 12.

20b

CITY OF PORTLAND  
July 22, 1999  
Page 3

The aerial topography Jim provided was helpful in revising my calculations. Attached is a revised plan for catchments 20 to 24 for your review. I have revised the paths as well.

13. I realized Catchment 5 was under development as Jameson Place while doing the analysis. I selected a curve number of 83, which would represent the area as developed. My goal in preparing this analysis was to reflect the developed conditions as best as practicable. Please note the new development does have a detention basin to control flows that affect this project.

14. The boundary plan is being provided to you under a separate cover.

Hopefully this addressed your concerns.

Sincerely,

PINKHAM & GREER

A handwritten signature in black ink, appearing to read "Thomas S. Greer".

Thomas S. Greer, P.E.

TSG/lk

Enclosure

Copy: Amy Mulkerin, Greg McCormack, A&G Associates

20c

**The Pines**  
**A Subdivision in North Deering**  
**Portland, Maine**

**Drainage Analysis**

**July 1999**

**Prepared by:**

**Pinkham & Greer Consulting Engineers, Inc.**  
**170 U.S. Route One**  
**Falmouth, Maine 04105**

**(207) 781-5242**



20d

## Drainage Analysis

### The Pines A Subdivision in North Deering Portland, Maine July 22, 1999

#### Project Summary:

This project by A & G Associates is the combination of existing subdivision lots to create conforming lots in 3 areas of North Deering. The areas are represented by 6 lots accessed by Wyoming Ave., 4 lots accessed by Kansas Ave., and 19 lots accessed by Penn Avenue. In the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary. Each of these areas will include the construction of new roads. See Master Plans of the Pines for a layout of properties owned by A&G Associates.

#### Location:

The project site is located east of Allen Avenue Extension, north of Ray Street and Virginia Street and south of the Falmouth/Portland boundary. The drainage basin above the site includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line. The area south of the site from Ray Street to Virginia Street and a small section south of Ray Street drains to the site through a series of existing stormdrains and swales. See sheets D-1 and D-2 for boundaries.

#### Soils:

The area around the site is currently developed with residential housing. See D-1 and D-2 for existing development. The soils in the project drainage basin consist of a mix of hydrologic groups. Below is a partial listing of soils and groups that was used to determine curve numbers.

Table 1  
Soils

Symbol Soil	Name	Hydrologic Group
Au	Au Gres	C
Bo	Biddeford	D
Bu	Buxton	C
De	Deerfield	B
Hr	Hollis	C/D
Hs	Hollis	C/D
Wm	Windsor	A
Sn	Scantic	D

Soils on site in the area of Penn Avenue are Hollis and Deerfield; for Kansas are Windsor and Hollis; and for Wyoming are Hollis, and Scantic with Biddeford at the bottom of the swale. Based on the County Soils Mapping and site walks, the area of construction for these projects has suitable soils for residential development.

The center of the site between Penn Ave. and Kansas Ave. is mapped as Scantic. It is a wetland area with some open water visible on the aerial photograph. This area was mapped as a wetland and is not suitable for residential development.

The remaining area to be developed is off the end of Kansas, although mapped as Scantic on the County Mapping the area is an upland and consistent with the Hollis series mapping. Future development will require an additional stream crossing to access this area. A similar box culvert to that used on Penn Avenue will be used for this crossing.

Wetland alteration permits for the Penn Avenue area and the Wyoming crossing have been obtained from the Maine Department of Environmental Protection. An additional permit is required when Kansas is extended.

**Topography:**

The site is located approximately one mile from the Presumpscot River and its outlet under Route 295 to Casco Bay. The drainage basin's top end at Summit Street is approximately elevation 160 according to the USGS map, on site the elevation is approximately elevation 90. Average slopes in the area are 2% with some areas up to 8%. The stream channels are relatively flat between 0.5% and 1.0%.

**Land Use:**

The majority of the drainage basin is developed with single-family homes on ¼ to ½ acre lots. There are some areas of open fields and woods between the homes. Between Ray Street and Virginia Street there is about 8 acres of park that has mature pine trees.

On site the majority of the area between Penn Avenue and Kansas Avenue is open wetland and will remain in the existing condition. There are utility easements for sewer and water that run through the site. These provide some pedestrian access. They run along the existing paper street right of ways. See sheet D-1 and D-2 for photographic information on land use.

**Analysis:**

The watershed, approximately 320 acres was analyzed using the Soil Conservation Service TR-20 method to predict peak flows. This method uses hydrologic soil group, vegetative cover, ground slope and land use to establish drainage conditions. The computer model, developed by Applied Microcomputer Systems of Chorcura, NH was, used to generate the technical data sheets attached.

Peak flows for the 24-hour, 2-year, 10-year, 25-year and 100-year storm events were determined using 24-hour rainfall amounts of 3.0, 4.7, 5.5 and 6.7 inches. A type III Coastal Storm was used as the project is located within 50 miles of the coast.

The drainage basin was divided into subcatchments using existing topographic features and drainage systems as a guide. Some field confirmation of pipe sizes was done for major culverts and drainage systems. Pond sizing and stage storage volumes were estimated based on field observations. Roadway culverts were modeled as ponds with a culvert outlet. This more accurately predicts existing flow conditions for larger storms.

Stream channels were estimated based on field observations. Side slopes vary through the length. In general the existing channels appear stable with a mineral base of clay or silt consistent with the soil types.

The curve numbers for each subcatchment was determined using soil type and land use. In general the curve numbers for the developed areas range from 61 for A soils to 87 for D soils. In the undeveloped condition the curve numbers were select 4 to 8 points less.

The analysis focused on peak flows below the site. The goal is to have peak flows below the site equal to or less than the existing peak flows. This ensures that the existing stream channels are not adversely affected no additional ponding or flooding will occur. Based on the model the peak flows will be reduced as noted in the following table.

20g

Table 2  
Peak Flows Below Penn Avenue  
Cubic Feet per Second

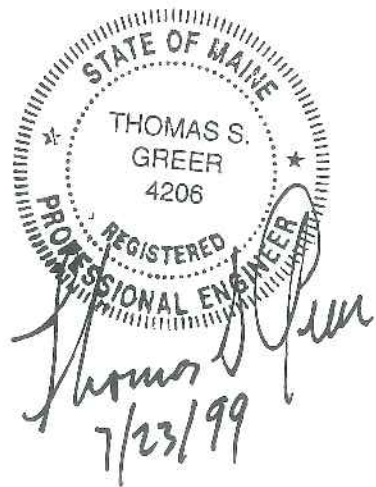
Storm Event	2-year	10-year	25-year	100-year
Existing Flows	49.09	123.7	160.4	224.8
Proposed Flows	43.91	106.3	133.5	178.3

The flows are reduced as a result of the 30" culvert at Wyoming and the 4x6 box culvert at Penn Avenue.

There are two areas above the site that the model indicates exceed the existing stormdrain capacity in 10 to 25-year storms. These include the 30" culvert and stormdrain system crossing Allen Avenue north of Summit Street and the 30" culvert crossing Virginia Street east of Kansas. These systems date to the period of design when a 10-year design storm was common so it is expected that these systems reach capacity at that point. In terms of maintenance the culvert crossing Virginia is ¾ full of sand and has a submerged outfall.

Conclusion:

The construction of Wyoming, Kansas and Penn Avenues and future extension of Kansas Avenue will not have a detrimental affect on down stream properties from the drainage passing through this site.



201

July 14, 1999

Mr. Frank Brancely or Mr. Bill Goodwin  
Engineer City of Portland  
Public Works Department


Re: Sewer Capacity Letter:  
    Kansas Avenue Extension (4) single family lots  
    Penn Avenue Extension (13) single family lots

Dear Mr. Goodwin:

The purpose of this letter is to request a sewer capacity letter concerning the development of (4) single family homes off Kansas Avenue and (13) single family homes off Penn Avenue, Phase II.

Each home will contain 3 or 4 bedrooms. I would guess there will be five (3) bedroom homes and twelve (4) bedroom homes. Based on 90 gallons/day/bedroom, the expected flow will be 5670 gallons/day.\* The discharge point is as shown on the enclosed plan.

Sincerely,



Gregory T. McCormack  
Pines of Portland, Inc.

* 5 x 3 x 90 gallons/day =	1350 gallons/day
12 x 4 x 90 gallons/day =	4320 gallons/day
TOTAL:	5670 gallons/day

# MAINE BANK & TRUST

20h

May 25, 1999


Joseph E. Gray, Jr., Director  
Planning and Urban Development  
City of Portland  
Portland, Maine 04101

Re: Amy Mulkerin and Gregory McCormack - "The Pines"

Dear Mr. Gray;

After review of financial information, Maine Bank & Trust Company believes that the above referenced borrowers are financially capable of completing their proposed construction project in "The Pines". Ms. Mulkerin and Mr. McCormack have been customers of Maine Bank & Trust Company for over 3 years and have always performed as agreed.

Sincerely,



Robert A. Harmon  
Senior Vice President



AH. 7

**From:** "Steve Bushey" <srbushey@maine.rr.com>  
**To:** "Kandi Talbot" <KCOTE@ci.portland.me.us>  
**Date:** Fri, May 19, 2000 9:10 AM  
**Subject:** Fw: The Pines

-----Original Message-----

From: stephen bushey <bbushey@maine.rr.com>  
To: srbushey@maine.rr.com <srbushey@maine.rr.com>  
Date: Friday, May 19, 2000 7:16 AM  
Subject: The Pines

Kandi,

I have reviewed the revised plan prepared by Pinkham and Greer for The Pines and offer the following comments:

1. The culvert cross section should be revised since it appears the invert elevations are graphically misrepresented. The inlet side should be on the left side of the detail so that the toewall and waterstop are nearer the inlet.
2. Silt fence should be shown on Lot 12.
3. Evidence that a new NRPA and ACOE approval for the Lot 12 and Lot 24 stream crossings have been received. I did not think these were covered under the original agency approvals.
4. Does this additional lot development now require the applicant receive review and approval under the City's delegated review for a MEDEP Site Location of Development Review?
5. The computations for sizing of all riprap aprons and riprap sizes should be provided.
6. A no cut buffer should be provided on Lot 12.
7. the Fire Dept. should review and sign off on the proposed 15' driveway width.
8. The applicant should provide an Ability to Serve and to connect letter from the Public Works Dept. The Dept. may have special guidelines as to a connection on an interceptor sewer.
9. Stone Check dams should be provided on the ditch on the uphill side of the lot 24 D/W
10. Spot grades should be provided at the end of Kansas Ave. This may be an area prone to poor drainage.
11. The driveways should be 4" of base gravel and 12" of subbase the entire length.

if you have any questions regarding these comments please call.

Steve Bushey, Acting Development Review Coordinator.

*land*

Corporation Counsel  
Gary C. Wood



**CITY OF PORTLAND**

Associate Counsel  
Charles A. Lane  
Elizabeth L. Boynton  
Donna M. Katsiaficas  
Penny Littell

May 27, 1999

Via Fax: 773-8023

John Bannon, Esq.  
Murray, Plumb & Murray  
75 Pearl Street  
P.O. Box 9785  
Portland, ME 04104

Dear John:

I appreciated receiving your letter of March 25, 1999 in which you set forth 1) your client's position as to the history of events leading up to the purchase of twenty acres of land in the North Deering area by A&G Associates and 2) your legal position with regard to the City's requirement that this land is subject to subdivision and site plan review were it is being divided into three or more lots. This includes the six lot subdivision which The Pines is seeking on Wyoming/ Kansas (three of the lots which were sold to A&G through the tax acquired process) as well as the thirteen lot subdivision at the terminus of Penn Avenue. I forwarded your letter on to the Planning Department and the City Manager.

After reviewing the factual background and the legal arguments involved in the matter, the City continues to maintain that Planning Board approval is required for the subdividing of these two tracts of land. Your offer to settle this matter by gaining permits to develop four areas of land without Planning Board approval was considered, but was deemed not to be in the best interest of the City nor advisable given the drainage, street and other issues in the area affected.

While I understand you and your clients disagree with the City's interpretation, this area of the law is an evolving one only periodically opined on by the Courts. It would appear the most expeditious method of approval for your clients would be the immediate submission of subdivision and site plans for review and approval by the Planning Board. Under the circumstances a six to eight week process may be expected prior to approval.

Sincerely,

Penny Littell  
Associate Corporation Counsel

Cc: Robert B. Ganley, City Manager  
Joseph Gray, Director, Planning & Urban Development  
Alex Jaegerman, Chief Planner  
Kandi Talbot, Planner



**STORMWATER MANAGEMENT REPORT  
WYOMING AVENUE  
MAY 7, 1999**

***INTRODUCTION:***

This project includes the construction of approximately 400 feet of Wyoming Avenue from Virginia Street to service 6 residential lots. The street will include storm drains, sewer, water and underground electrical service meeting city standards.

The site has a small stream that crosses the property dividing it into two sections. Two of the proposed lots are north of the stream and four lots are south. The road crossing uses a 30" diameter pipe to convey the flow under the road. This stream starts at the outlet of the storm drain from Allen Avenue.

A sewer easement also runs parallel to the stream in an east-west direction from Allen Avenue.

***METHODOLOGY:***

This analysis uses the Soil Conservation Service TR-20 method to predict flows. This method uses hydrologic soil group, vegetative cover and ground slope to establish drainage conditions. The use of a computer model developed by Applied Microcomputer Systems of Chocura, NH, generated the technical data sheets attached.

The peak flows for the storm events of the 2-year, 10-year, and 25-year recurrence rate were used. These are 3.0, 4.7, and 5.5 inches of rain in a 24-hour period.

***SOILS AND TOPOGRAPHY:***

Based on a field review of the area and review of the USGS map, the watershed boundaries were determined. The watershed includes 48 acres west of Allen Avenue. This area includes the fields at Lyseth School and a new residential subdivision. The soils are typical for Portland with silty/clayey soil with shallow to bedrock conditions. A hydrologic group C was selected to model the conditions.

The slope of the watershed is relatively flat at 2.5 to 5.0%. The stream created by the stormdrain outlet, has a 3% slope on the channel bed.



50

**ANALYSIS:**

The area was modeled using curve numbers for typical urban residential development on C soils. The existing conditions used an average of 1/2-acre lots while the developed conditions used 1/4-acre lots. This changes the curve number from 80 to 83 for the 6 acres below Allen Avenue.

The 30" culvert that crosses Wyoming Avenue creates a natural detention basin up stream of the road. Modeling this area with the culvert in place creates the following peak flows down stream of the project.

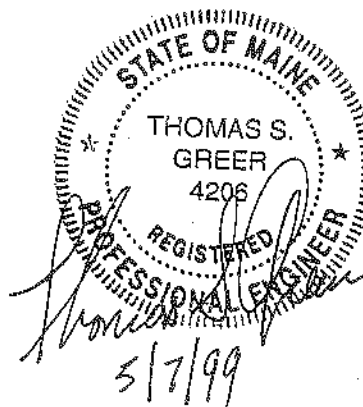
TABLE 1  
PEAK FLOW BELOW WYOMING

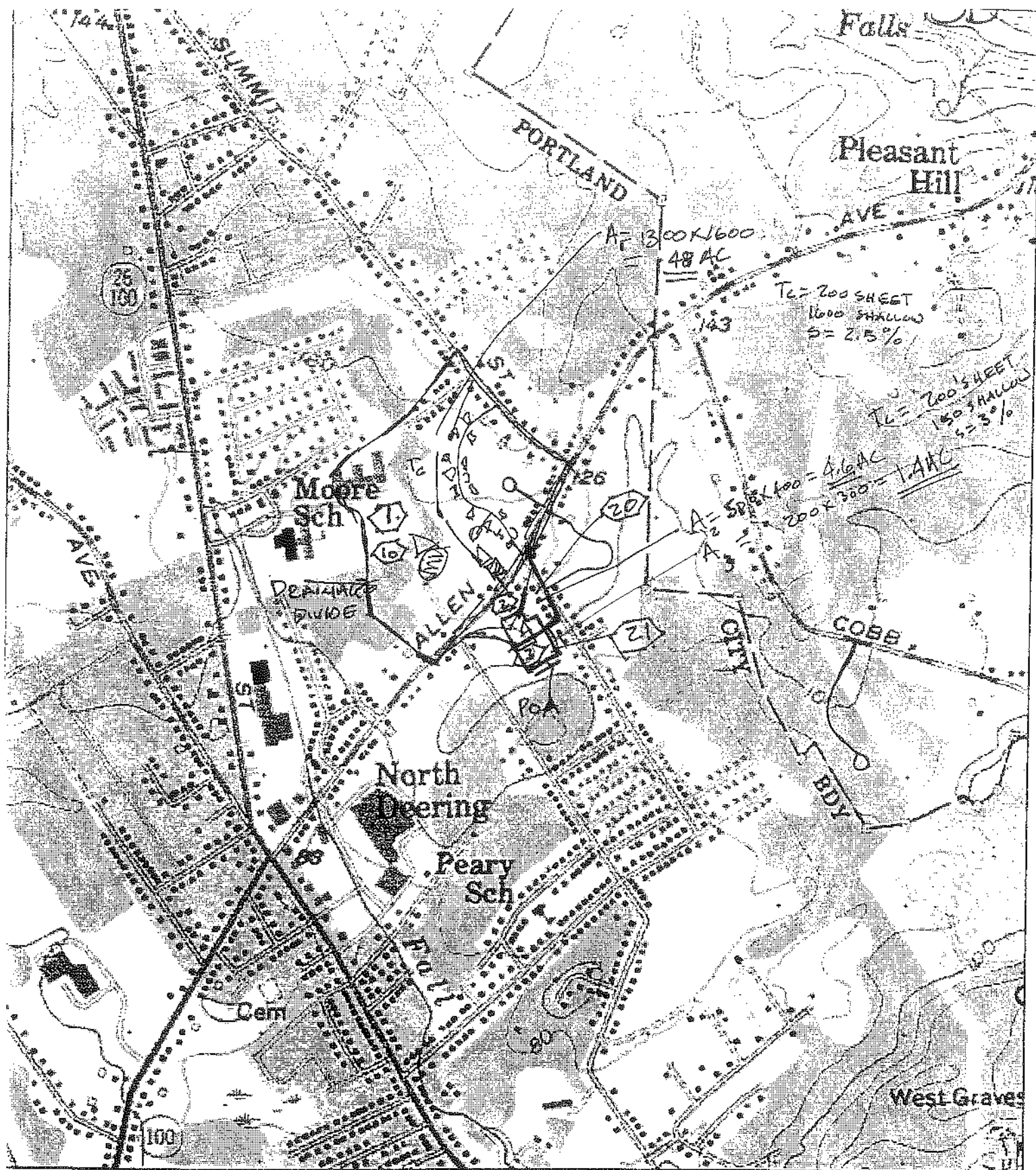
Storm Event	Rain Fall	Pre-Development CFS	Post-Development CFS
2 Years	3.0"	27.94	27.33
10 Years	4.7"	47.05	45.33
25 Years	5.5"	68.49	56.06

There is a slight reduction in peak flows in the 2 and 10-year storms with a significant reduction in the 25-year storm. The 25-year change is due to the design of the Allen Avenue storm drain system. It functions adequately for a 10-year design flow as expected. In higher storms the road over tops increasing the peak flows. Wyoming will detain the flow without overtopping the road in a 25-year storm, which significantly reduces the flows.

**CONCLUSION:**

Based on the reduction in peak flows the project as designed will not have significant drainage impacts on down stream properties.





Name: PORTLAND WEST  
 Date: 5/6/99  
 Scale: 1 inch equals 1000 feet

Location: 043° 42' 19.5" N 070° 18' 53.3" W  
 WYOMING AVENUE  
 DRAINAGE PLAN  
 5/7/99  
 TSG



CONSULTING ENGINEERS, INC.

Mr. Alex Jaegerman, City Planner  
CITY OF PORTLAND  
389 Congress St.  
Portland, ME 04101-3503

110000178 U.S. Route One T

Falmouth, Maine 04105

Tel: 207.781.5242

Fax: 207.781.4245

May 10, 1999  
File: 99122

RE: WYOMING AVENUE ESPLANADE WAIVER REQUEST

Dear Alex:

On behalf of A&G Associates we request the City grant a waiver from the typical street section for Wyoming Avenue. We would like you to consider eliminating the esplanades on Wyoming and construct the sidewalks immediately behind the curb, as well as eliminating one sidewalk. There are two reasons for our request that the board should consider.

1. The Army Corp and DEP require stream crossings to be as short as practical and by eliminating the esplanades the culvert crossing is 8' shorter. This meets their goals.
2. The first section of road goes between existing properties. It is impractical for the construction to occur without impacting the abutting properties. To illustrate this we have provided actual cross-sections of the road at station 90+00 of the standard section and the requested section, see figures 1 and 2 attached. As shown the standard section extends on the abutting properties, which A&G Associates has no right to construct.

The second waiver we would like the board to consider is a sidewalk on one side only. For 6 homes, it is likely that pedestrian traffic will walk in the street, if a single sidewalk is developed it should provide adequate space for pedestrians.

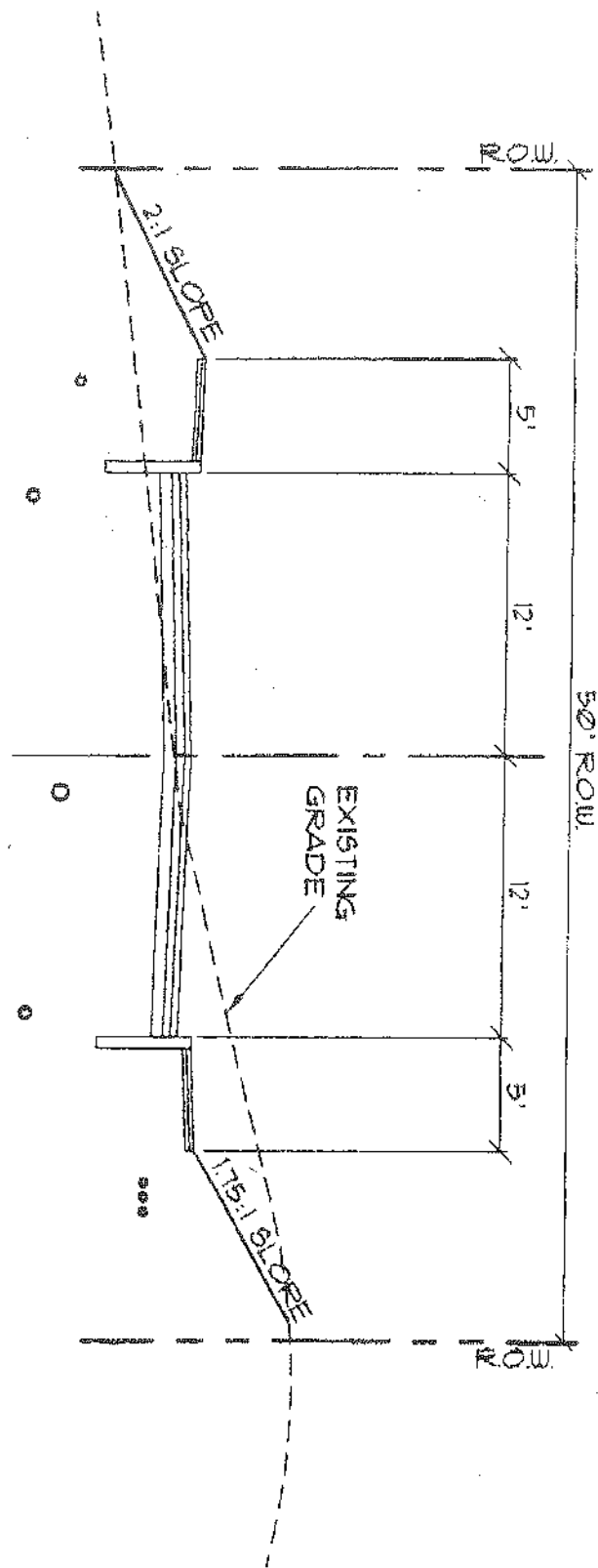
Please let me know if you have any questions.

Sincerely,

PINKHAM & GREER

Thomas S. Greer, P.E.

TSG/ik  
C: A&G Associates

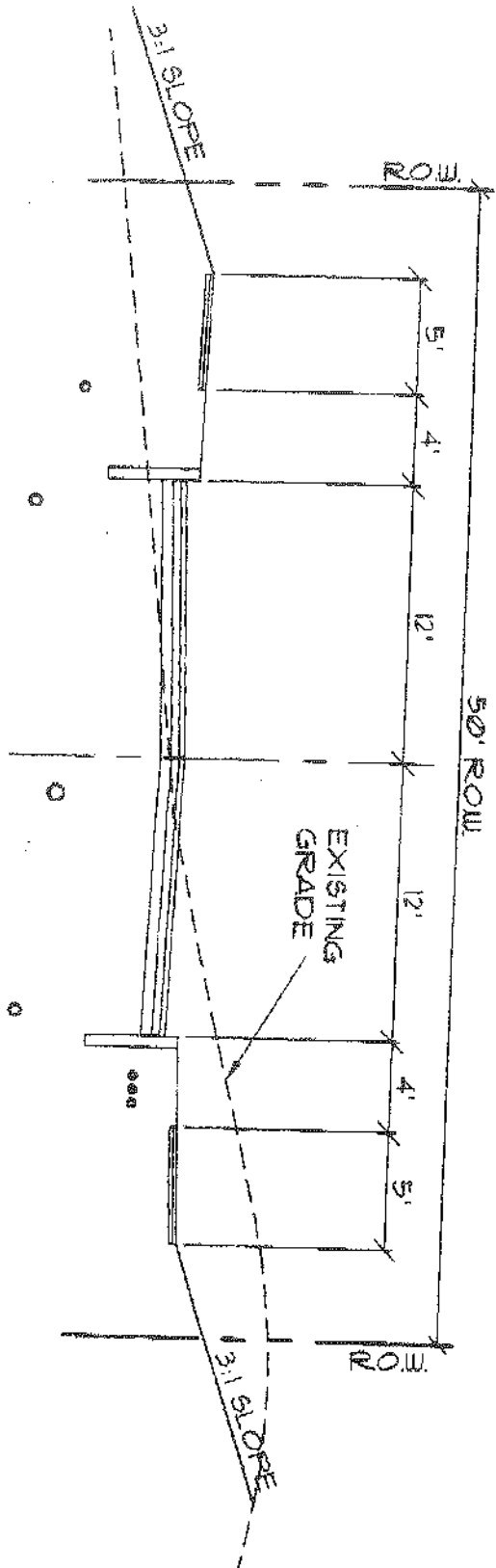


WALIVER REQUEST: THIS ROAD SECTION, WITHOUT ESPLANADES, FITS WITHIN EXISTING 50' RIGHT OF WAY.

CROSS-SECTION AT STATION 0+90

SCALE: 1" = 8'

4b



WAIVER REQUEST: NORMAL ROAD SECTION DOES NOT FIT IN EXISTING 50' RIGHT OF WAY.

CROSS-SECTION AT STATION 0+90

SCALE: 1"=8'



Attachment 5

**PUBLIC WORKS ENGINEERING**  
**MEMORANDUM**

**To:** Kandi Talbot, Planner

**From:** Anthony Lombardo, P.E., Project Engineer

**Date:** May 18, 1999

**Subject:** Wyoming Avenue Subdivision....A & G Associates.

The following comments were generated during Public Works Engineering second review of proposed development of Wyoming Avenue, westerly off Virginia Street. The plans submitted are dated May 7, 1999 and received on May 11, 1999.

As part of the requirements for the development of 14-403 Streets, the applicant must submit the plans and supporting materials required under Article IV- Subdivisions...in Chapter 14, Land Use Regulations of the City Ordinance. Therefore, the applicant still needs to submit a "Standard Boundary Plan" which specifies the complete limits of this development and is prepared and stamped by a professional licensed surveyor.

The applicant must still provide evidence of DEP and/or Army Corp of Engineers permit applications and approvals for the proposed culvert crossing and wetland filling.

Applicant must still provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.

The applicant has requested an esplanade waiver and waiver of sidewalks on both sides of the streets. Public Works does not object to the construction of a sidewalk on only one side of the street. We would prefer construction of this sidewalk on the northerly side of Wyoming Ave. Public Works is, however, requiring the applicant to also include a four (4) feet wide vegetated esplanade on northerly side of Wyoming. The applicant will have to identify areas needing slope stabilization where cut slopes exceed 2:1 and where fill slopes exceed 3:1.



Attorneys At Law

Kaudi Talbot

July 2, 1999

Attachment 6

VIA TELEFAX
Penny Littell, Esq.
Corporation Counsel's Office
City of Portland
Portland City Hall
389 Congress Street
Portland, Maine 04101-3509

RE: Pines of Portland / Development in the Area of Penn and Wyoming Avenues

E. Stephen Murray
Peter S. Plumb
John C. Lightbody
Thomas C. Newman
John C. Bannon
Susan D. Thomas
Drew A. Anderson
Richard L. O'Meara
Barbara T. Schneider
Christopher B. Branson
Charles P. Piacentini, Jr.
Michael D. Traister
Rita S. Saliba

Dear Penny:

First, this letter will confirm that this project has been placed on the Planning Board's agenda for (1) a workshop on July 13, 1999, and (2) a public hearing on July 27, 1999.

Second, this letter will confirm that, in light of the above, my clients do not intend to raise, at either of the above proceedings, the issue of whether the Planning Board has jurisdiction to review this project as a subdivision. My clients should not be understood as having waived or conceded that issue. However, given the City's willingness to conduct Planning Board review of this project in an expedited manner, my clients are willing to "table" their jurisdictional challenge. Hence, you need not prepare any rebuttal to the arguments we have raised to date.

On behalf of my clients, I thank you and Mr. Gray for working toward an amicable reconciliation of our interests and those of the City.

Sincerely,

[Handwritten signature of John C. Bannon]

John C. Bannon

JCB/kh

cc: Amy Mulkerin
Greg McCormack

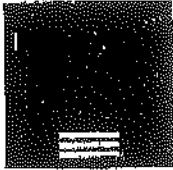
75 Pearl Street
Post Office Box 9785
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04104-5085

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207.773.5651

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CONSULTING ENGINEERS

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- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

## MEMORANDUM

**TO:** Kendi Talbot, Planner

**FROM:** Jim Wendel, P.E., Development Review Coordinator

**DATE:** June 7, 1999

**RE:** The Pines Subdivision, North Deering

As requested, a review of the overall drainage issue associated with the 1925 subdivision known as The Pines has been completed. The review included a cursory site reconnaissance and review of the Portland West Quadrangle 7.5-minute series USGS map of the area.

Based on reduced copies of the original subdivision plat provided by the applicant, it appears that the undeveloped area of The Pines is approximately 35 acres in size. There is an unnamed stream that meanders through the area in a southeasterly and easterly direction to Falmouth and Casco Bay. The stream crosses Cobb Road, Middle Road, the St. Lawrence & Atlantic Railroad and Interstate 295. The unnamed stream drains into Casco Bay at the Portland-Falmouth town line. The unnamed stream includes a pond located upgradient and abutting Cobb Road and a tributary that crosses Virginia Street.

The watershed upgradient of The Pines and associated with the unnamed stream and tributary appears to include the westerly side of Cobb Road in Falmouth, northwesterly of Allen Avenue to Pinloch Drive, off of Summit Street, and the Moore School area. Several residential homes at the ends of Vermont and Maine Avenues are downgradient of The Pines that directly abut the edge of the unnamed stream. It is known that some intermittent flooding does occur in the back yards of two of the properties on Vermont Avenue during certain storm events.

Due to the relatively large scale and long-term development of the project, we recommend that a stormwater management master plan be prepared at this time for the whole area to be developed. The plan would show the overall existing watershed of the project, existing topography, existing City stormwater infrastructure that is part of this watershed, existing limits of wetlands and soil types. The plan would show proposed subcatchments at each phase, locations for proposed stormwater detention facilities, street storm drain alignments, and proposed drainage courses with direction of flow based on the existing terrain and the anticipated phasing of the project. Preliminary road profiles would need to be developed to allow identification of probable road culvert crossings and lot storm drain inlet connection points into the road storm drain system, as well as probable common rear lot drainage easements. Detailed stormwater analysis for the stormwater management master plan is not suggested at this time. However, simplified stormwater analysis would likely be needed to develop sizes of the detention facilities for lot planning purposes of the development. Detailed stormwater analysis would occur during detailed design for each phase and would build on the previous work for consistency of analysis. The stormwater management master plan document submitted to the City would be plans at each phase showing the information mentioned above, with a narrative discussing the findings of the stormwater management planning analysis for the existing and proposed stormwater conditions.

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DELUCA HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

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Finally, we recommend that the project provide water quality infrastructure as required in the revised Section V, Stormwater Management Standards, of the City's Technical and Design Standards and Guidelines. These measures are required to be consistent with the practices delineated in MeDEP's Stormwater Management Best Management Practices manual.

It is our opinion that a watershed master plan as suggested above will provide the best opportunity to:

- Minimize the potential for flooding to abutter both downstream and within the development;
- Minimize erosion and maintain stability of the unnamed stream;
- Minimize water quality degradation of the unnamed stream and Casco Bay;
- Provide a full understanding of the implications of changes in the phasing of the project, should that occur. This will allow the City to respond in a knowledgeable manner;
- Provide a full understanding at the beginning of the project of the impact of the full build-out development on the area; and
- Provide for orderly and cost-effective construction of the development to the full build-out condition.



CITY OF PORTLAND

July 2, 1999

Mr. Greg McCormack  
Pines of Portland Inc.  
426 Forest Avenue  
Portland, ME 04101

RE: Wyoming Avenue, Kansas Avenue, and Penn Avenue Subdivision

Dear Mr. McCormack:

Below is a list of items that shall be submitted regarding the Subdivision review process for Wyoming Avenue, Kansas Avenue, and Penn Avenue.

- Due to the relatively large scale and long-term development of the project, we request that a stormwater management master plan be prepared for the whole area to be developed. The plan would show the overall existing watershed of the project, existing topography, existing City stormwater infrastructure that is part of this watershed, existing limits of wetlands and soil types. The plan would show proposed subcatchments at each phase, locations for proposed stormwater detention facilities, street storm drain alignments, and proposed drainage courses with direction of flow based on the existing terrain and the anticipated phasing of the project. Preliminary road profiles would need to be developed to allow identification of probable road culvert crossings and lot storm drain inlet connection points into the road storm drain system, as well as probable common rear lot drainage easements. Please see Jim Wendel's memo which is attached.
- A note shall be added to all recording plats which states that all lots fronting on two streets may only have access from one street.
- A note shall be added to the subdivision plan which states "No City of Portland public services shall be provided to the Pines Development until the streets have been accepted by the City."
- The entire subdivision should be shown on one comprehensive plat.

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**Penn Avenue Phase of the Subdivision**

The applicant shall revise the application for subdivision review in Building Inspections for the proposed 13-lot phase of the subdivision. Staff has a plan showing the lot layout, but does not have any road profiles or details for this proposed project. This revision must include all information required in the subdivision ordinance. A copy of the subdivision ordinance has been included with this letter. This revision must also include the plans for the construction of Penn Avenue that was previously reviewed by Public Works.

**Kansas Avenue Phase of the Subdivision**

The applicant shall revise the application for subdivision review in Building Inspections for the proposed 4-lot phase of the subdivision. Staff has received plans for the proposed project. The following information is still outstanding:

- Evidence of capacity letters from all of the respective utility companies, evidence of financial capability, and evidence that the applicant has right, title and interest.
- Sidewalk is required on both sides of the street. If a waiver is being requested for one side of the street, than that needs to be done in writing, explaining the reason for the request.

**Wyoming Avenue Phase of the Subdivision**

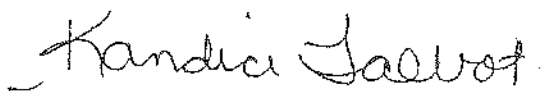
At this time, it appears that this submittal is complete.

These are the comments generated by staff to date. As other comments are generated, they will be forwarded to you accordingly.

These projects are scheduled for a workshop on July 13th. I will need 11" x 17" reductions for all plans by Thursday, July 8th.

If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,



Kandice Talbot  
Planner

- cc: Joseph E. Gray, Jr., Director of Planning and Urban Development
- Alex Jaegerman, Chief Planner
- Penny Littell, Associate Corporation Counsel
- Tony Lombardo, Project Engineer
- Jim Wendel, Development Review Coordinator

**The Pines**  
**A Subdivision in North Deering**  
**Portland, Maine**

**Drainage Analysis**

**July 1999**

**Prepared by:**

**Pinkham & Greer Consulting Engineers, Inc.**  
**170 U.S. Route One**  
**Falmouth, Maine 04105**

**(207) 781-5242**



# Drainage Analysis

## The Pines A Subdivision in North Deering Portland, Maine

7/7/99

### Project Summary:

This project by A & G Associates is the combination of existing subdivision lots to create conforming lots in 3 areas of North Deering. The areas are represented by 6 lots accessed by Wyoming Ave., 4 lots accessed by Kansas Ave., and 19 lots accessed by Penn Avenue. In the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary. Each of these areas will include the construction of new roads. See Master Plans of the Pines for a layout of properties owned by A&G Associates.

### Location:

The project site is located east of Allen Avenue Extension, north of Ray Street and Virginia Street and south of the Falmouth/Portland boundary. The drainage basin above the site includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line. The area south of the site from Ray Street to Virginia Street and a small section south of Ray Street drains to the site through a series of existing stormdrains and swales. See sheets D-1 and D-2 for boundaries.

### Soils:

The area around the site is currently developed with residential housing. See D-1 and D-2 for existing development. The soils in the project drainage basin consist of a mix of hydrologic groups. Below is a partial listing of soils and groups that was used to determine curve numbers.

Table 1  
Soils

Symbol Soil	Name	Hydrologic Group
Au	Au Gres	C
Bo	Biddeford	D
Bu	Buxton	C
De	Deerfield	B
Hr	Hollis	C/D
Hs	Hollis	C/D
Wm	Windsor	A
Sn	Scantic	D



Soils on site in the area of Penn Avenue are Hollis and Deerfield; for Kansas are Windsor and Hollis; and for Wyoming are Hollis, and Scantic with Biddeford at the bottom of the swale. Based on the County Soils Mapping and site walks, the area of construction for these projects has suitable soils for residential development.

The center of the site between Penn Ave. and Kansas Ave. is mapped as Scantic. It is a wetland area with some open water visible on the aerial photograph. This area was mapped as a wetland and is not suitable for residential development.

The remaining area to be developed is off the end of Kansas, although mapped as Scantic on the County Mapping the area is an upland and consistent with the Hollis series mapping. Future development will require an additional stream crossing to access this area. A similar box culvert to that used on Penn Avenue will be used for this crossing.

Wetland alteration permits for the Penn Avenue area and the Wyoming crossing have been obtained from the Maine Department of Environmental Protection. An additional permit is required when Kansas is extended.

#### **Topography:**

The site is located approximately one mile from the Presumpscot River and its outlet under Route 295 to Casco Bay. The drainage basin's top end at Summit Street is approximately elevation 160 according to the USGS map, on site the elevation is approximately elevation 90. Average slopes in the area are 2% with some areas up to 8%. The stream channels are relatively flat between 0.5% and 1.0%.

#### **Land Use:**

The majority of the drainage basin is developed with single-family homes on  $\frac{1}{4}$  to  $\frac{1}{2}$  acre lots. There are some areas of open fields and woods between the homes. Between Ray Street and Virginia Street there is about 8 acres of park that has mature pine trees.

On site the majority of the area between Penn Avenue and Kansas Avenue is open wetland and will remain in the existing condition. There are utility easements for sewer and water that run through the site. These provide some pedestrian access. They run along the existing paper street right of ways. See sheet D-1 and D-2 for photographic information on land use.

**Analysis:**

The watershed, approximately 320 acres was analyzed using the Soil Conservation Service TR-20 method to predict peak flows. This method uses hydrologic soil group, vegetative cover, ground slope and land use to establish drainage conditions. The computer model, developed by Applied Microcomputer Systems of Chocoma, NH was used to generate the technical data sheets attached.

Peak flows for the 24-hour, 2-year, 10-year, 25-year and 100-year storm events were determined using 24-hour rainfall amounts of 3.0, 4.7, 5.5 and 6.7 inches. A type III Coastal Storm was used as the project is located within 50 miles of the coast.

The drainage basin was divided into subcatchments using existing topographic features and drainage systems as a guide. Some field confirmation of pipe sizes was done for major culverts and drainage systems. Pond sizing and stage storage volumes were estimated based on field observations. Roadway culverts were modeled as ponds with a culvert outlet. This more accurately predicts existing flow conditions for larger storms.

Stream channels were estimated based on field observations. Side slopes vary through the length. In general the existing channels appear stable with a mineral base of clay or silt consistent with the soil types.

The curve numbers for each subcatchment was determined using soil type and land use. In general the curve numbers for the developed areas range from 61 for A soils to 87 for D soils. In the undeveloped condition the curve numbers were select 4 to 8 points less.

The analysis focused on peak flows below the site. The goal is to have peak flows below the site equal to or less than the existing peak flows. This ensures that the existing stream channels are not adversely affected no additional ponding or flooding will occur. Based on the model the peak flows will be reduced as noted in the following table.

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Table 2  
Peak Flows Below Penn Avenue  
Cubic Feet per Second

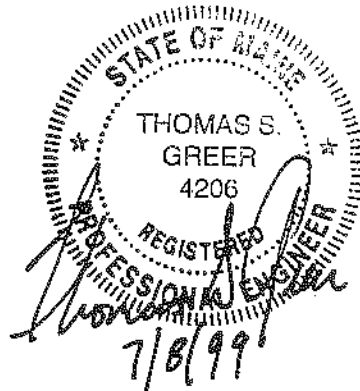
Storm Event	2-year	10-year	25-year	100-year
Existing Flows	48.55	122.4	158.4	221.6
Proposed Flows	43.40	105.2	132.2	176.0

The flows are reduced as a result of the 30" culvert at Wyoming and the 4x6 box culvert at Penn Avenue.

There are two areas above the site that the model indicates exceed the existing stormdrain capacity in 10 to 25-year storms. These include the 30" culvert and stormdrain system crossing Allen Avenue north of Summit Street and the 30" culvert crossing Virginia Street east of Kansas. These systems date to the period of design when a 10-year design storm was common so it is expected that these systems reach capacity at that point. In terms of maintenance the culvert crossing Virginia is ¾ full of sand and has a submerged outfall.

Conclusion:

The construction of Wyoming, Kansas and Penn Avenues and future extension of Kansas Avenue will not have a detrimental affect on down stream properties from the drainage passing through this site.



Planning Board  
City of Portland, Maine

June 18 1999

You are currently considering plans for further development in the Virginia Street, Maine Avenue area, a development which we have known for many years would eventually take place. I wish to say at the outset that I have no quarrel with the development of this area. However, before the City of Portland allows any continued work I think they should address the current needs of the general neighborhood.

There is a six unit phase of this development going on currently. Large trucks and heavy equipment traffic is a daily rumble on Virginia Street. Automobile traffic on Virginia Street-Ray Street-Maine Avenue has increased yearly with the increased housing on Bramblewood, Racine, and Summit Street areas, not to mention the increased traffic caused by the Stapleford Falls/Stonecrest homes built during the last few years. Many of the residents of these homes use Virginia Street to avoid the already congested Allens Corner. The point of this being that we are already having problems in this once quiet residential neighborhood where sidewalks were not especially needed because traffic was low and fairly slow. Now drivers turn onto Virginia Street from Allen Avenue or Maine Avenue, and feeling Virginia Street is a straight shot they race to the next corner unmindful of the rules of residential speed limits of 25MPH. I cannot imagine how much more hazardous these streets will become with the additional traffic which further development will create.

*already  
at Allen Ave*

A traffic control device (other than a the orange barrel with the sign on top) should be installed at the Allen Avenue/Virginia Street/Bramblewood intersection where the Lyman Moore/Lyseth School students cross. An increase in family size homes will surely mean an increase in school children on the city side of Allen Avenue. Which brings another aspect into focus, of course: will the Lyseth/Lyman Moore School complex accommodate the addition of an estimated forty children?

Sidewalks should be planned and some very effective traffic control should be in place. If this development includes an all new street off Allen Avenue, that street should be the access for the cement trucks, graders, etc., not the existing residential streets.

Open space, park land (the Pines Park should be designated officially as a park so it could be properly cared for by the Park Department) or some provision should be given consideration by the developer and the city so children too young to go to the school yard from this side of Allen Avenue will have a safe place to play.


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Planning Board, City of Portland

June 18, 1999

-2-

I would like the Planning Board to take these concerns into consideration before they collectively make a decision to allow development to continue. A public hearing allowing residents to attend and have input should be held in the neighborhood at a time and place convenient to the residents similar to the annual neighborhood meetings held in a local school in order for these and other concerns to be brought forward and addressed.

  
Janice E. Major  
164 Virginia Street  
Portland, Maine 04103

**PLANNING BOARD REPORT #31-99A**

**THE PINES SUBDIVISION  
SUBDIVISION REVIEW  
THE PINES OF PORTLAND, INC., APPLICANT**

Submitted to:

Portland Planning Board  
Portland, Maine

October 12, 1999

**I. INTRODUCTION**

The Pines of Portland, Inc. is requesting review for a 30-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 5 lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. The applicant is proposing a four phase subdivision. Phase I has been developed previously. A vicinity map is included as Attachment 1.

The subdivision is broken up into 3 areas, which are Penn Avenue, Kansas Avenue, and Wyoming Avenue. Penn Avenue consists of 19 lots bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Falmouth line. Wyoming Avenue consists of 6 lots bounded by Kansas Avenue, Virginia Street and Racine Avenue. Kansas Avenue consists of 5 lots and is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street.

Approximately 492 notices were sent to area residents.

**II. BACKGROUND**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. Corporation Counsel feels that because the applicant is combining lots, reconfiguring the original subdivision and platting a new street, it must be reviewed under the subdivision ordinance, thus requiring Planning Board Review. The applicant was informed at the time of purchase that subdivision review would be required.

The applicant has also acquired additional land in this area, making it a total of 31.60 acres.

**III. SUMMARY OF FINDINGS**

Zone:	R-3
Subdivision Area:	31.60 acres
Number of Lots:	30 single family lots
Parcel Sizes:	ranging from 9,000 sq. ft. to 84,118 sq. ft.
Adjacent Uses:	Residential

**IV. STAFF REVIEW**

The proposal has been reviewed for compliance with the Subdivision and Site Plan Ordinance of the Land Use Code.

**V. SUBDIVISION REVIEW**

- 1. Water and Air Pollution

The development will not result in undue water or air pollution.

- 2/3. Water

The applicant has submitted a water capacity letter from the Portland Water District for all phases of the development.

4. Soil Erosion

The Development Review Coordinator has reviewed the plans and feel that limited data regarding erosion control measures have been shown on the plan. The DRC is recommending that the applicant update the plans to include adequate erosion control measures and the McDEP standards for stabilizing sites for the winter. The applicant has stated that they will revise the plans to address this concern.

5. Traffic

This subdivision consists of a number of undeveloped streets. The applicant is proposing to extend Penn Avenue, Kansas Avenue, and Wyoming Avenue.

Wyoming Avenue

The applicant is proposing to extend Wyoming Avenue approximately 370 feet to the east. The street will include storm drains, sewer, water and underground electric. The street will end with a snow plow turn around on Lot 27. The applicant is proposing granite curb and sidewalk along the northerly side of the street. The applicant is requesting a waiver of the sidewalk along one side of Wyoming Avenue because they would need to seek two outlying easements from property owners. Public Works has reviewed this request and does not object to the construction of a sidewalk on only one side of the street.

Penn Avenue

The applicant is proposing to extend Penn Avenue approximately 500 feet to the west. The applicant is then proposing to build a cross street to connect to property along Vermont Avenue and Jersey Avenue. The proposed name of the cross street is Liberty Way. The Fire Department has determined that Liberty Way is an acceptable name. The applicant is proposing sidewalk and granite curb along the Penn Avenue extension. Along the cross street, the applicant is proposing granite curb along both sides, but is proposing sidewalk on the easterly side only. The applicant is requesting a waiver of sidewalk along the westerly side of Liberty Way.

City ordinance requires that all streets be built to the extent of the frontage of the property. The applicant is not proposing to build the street to the end of proposed lots 18 and 19 on Vermont Avenue or Lot 12 on Jersey Avenue. The applicant has indicated that they may address this issue by street vacation and have submitted a one sentence letter to this effect. The plans show these streets not being built the entire frontage. However, the applicant has not submitted the street vacation application and mortgage holders within the existing subdivision have not been notified of the street vacation request, so the street vacation will have to be addressed at a future meeting. The applicant is addressing this issue by dividing the Penn Avenue development into two phases. If, at a later date, the City Council approves the street vacations for Vermont Street and Jersey Street, than the applicant would develop Lots 12, 18 and 19 at that time.



The subdivision plat has a note which states that street frontage variance has been received. A potential condition of approval is:

- that the note which states "street frontage variance received" must be removed from the overall subdivision plat.

#### Kansas Avenue

The applicant is proposing to extend Kansas Avenue approximately 250 feet to the west. The applicant is proposing granite curb along both sides of the proposed extension. Sidewalk is proposed along the southerly side of Kansas Avenue. At the last Planning Board workshop, the Board had recommended that the applicant install sidewalk along the northerly side of Kansas Avenue, because that is where the majority of the lots are located.

#### 6. Sanitary/Stormwater

##### **Sanitary**

The applicant is proposing to install new sewer lines within Wyoming Avenue, Penn Avenue and the cross street. There is an existing sewer line within Kansas Avenue that the applicant is proposing to utilize. Attachment 3 is a sewer capacity letter from the Portland Sewer Division.

##### **Stormwater**

The site consists of 31 acres bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth line. The total watershed, which includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line, consists of 300± acres. The proposal is that the 4 ft. x 6 ft. culvert located at Penn Avenue will act as a dam and will retain the drainage within the wetland areas to the north of Penn Avenue. This wetland area will serve as a large storage area for stormwater. The detention area is defined by contour 72' elevation. Anything below that will be detention area. A note has been added to the plan which states that "No filling or alteration of detention area, below 72' elevation, north of Penn Avenue."

The applicant has submitted conceptual grading plans. The Development Review Coordinator has reviewed the plans and his comments are included as Attachment 7. The DRC has requested NRPA approval for all wetland impacts. A NRPA application has been submitted to DEP and the applicant must provide staff with documentation that NRPA approval has been received from DEP. The applicant has addressed the DRC's comments in Attachment 9, however the DRC has not yet reviewed these comments.

At the last meeting, a major concern was the wetland delineation shown on the overall subdivision plan. Since that meeting a peer review of the wetland delineation was completed by Colen Peters, Professional Wetland Scientist. Included as Attachment 1 is the letter from Mr. Peters. Mr. Peters had concerns with the flagging in the area of Lots

13, 15 and 19 and flagging within the Wyoming Avenue area. The applicant has since re-flagged the area and revised the plan and Mr. Peters is satisfied with the wetland delineation.

There was also concern regarding the flooding of basements along Virginia Street. The applicant has addressed the effect that the development of The Pines will have on these basement water problems. Please see Attachment 6. The applicant's engineer states that the basement flooding at Virginia Street most likely occurs because the overlying coarse fill material becomes saturated with surface and rainwater. The finer textured marine sediment that is below has a very slow permeability so that the water becomes perched and flows through the fill and on top of the marine soil lay. It will then continue to flow down gradient and outlet either in the wetland, or into a lower "pocket" if it encounters one, which in this case is the basement area.

As done in other projects, because of the reservations concerning the drainage and how it will perform in the future, especially in the Penn Avenue area, where there is a channel that in the past has flooded abutters, staff is recommending that the applicant place \$15,000 in escrow for five years, after the completion of the project, in the event that problems occur within the channel. The applicant has stated that over the past year and a half the area has experienced two "one hundred year storms" and the drainage channel has performed reliably, and object to the escrow requirement. Staff and our consulting engineer remain concerned about possible downstream impacts from associated road and house lot development. A potential condition of approval is:

- The developer shall place \$15,000 in an interest bearing escrow account to be maintained by the City of Portland. These monies shall be deposited with the City within \_\_\_\_ days of the approval of the subdivision and shall remain for a period of five (5) years from the completion of all public improvements or the completion of seventy-five percent (75%) of all house lots in the approved subdivision, whichever occurs later. The escrow money shall be accessed by the City, after notice to the developer and a reasonable time to cure, if or when necessary to correct any on- or off-site improvements needed to resolve drainage problems associated with, or attributable to, the project. Determination of the appropriate use of said funds for such purpose shall be made by the Planning Authority, in consultation with Dept. of Public Works and consulting engineers as appropriate.

Public Works' had recommended that the applicant install a storm drain system within Liberty Way with catch basins, manholes and storm drain pipe to catch sheetflow from the drainage easements which are located in the abutting Falmouth subdivision. The applicant has revised the plan to incorporate the catch basins and storm drain, however did not show the manholes on the plan. Public Works' is recommending that the applicant revise their plan to connect the proposed catch basins into drain manholes and outlet runoff from the manholes. Public Works is also recommending that the applicant install an inlet pipe between lots 16 and 17 and connect into a drain manhole and storm drain line in Liberty Way. Public Works' memo is included as Attachment 8.

#### 7. Solid Waste Disposal

Curb side pickup is proposed.

8. Scenic Beauty

Warren Eldridge of Inland Fisheries and Wildlife, walked the site on September 7, 1999. He states in his letter, which is included as Attachment 10b, that although the proposed development will alter portions of this freshwater wetland as a result of road crossing, etc., the remaining wetland areas that are to be left undeveloped will continue to provide habitat for the limited species of wildlife he observed on the site. He also stated that the Portland Water District Right of Way will provide a buffer between existing and proposed development and provide travel opportunity for any larger animals that may seek to pass through developed areas.

9. Comprehensive Plan

This development meets the requirements of the City of Portland Comprehensive Plan.

10. Financial Capability

The applicant has provided a letter of financial capability.

11. Groundwater

The development as proposed will not adversely affect the quality or quantity of groundwater.

12. Flood Hazard/Shoreline

The site is not located in the flood hazard or shoreland zones.

13. Buffering

At the Public Hearing, abutters were concerned regarding buffering of the lots abutting the Falmouth town line. The applicant is providing a 5 ft. no cut area along the Falmouth town line to maintain a buffer.

14. Easements

The drainage easements noted on the plan need to be identified as either Public or Private Easements as follows:

**The Pines @ Wyoming**

The only public easement should be the 30' easement shown on the plan..

### **The Pines @ Kansas**

All drainage easements shown should be private. However, there is a question as to what the "Drainage Easement" noted on the southerly side of Kansas Ave references.

### **The Pines @ Phases I and II**

Public easements should be as follows:

- the 50' x 50' drainage easement abutting lot 12
- the 30' easement from the Falmouth Town line to Liberty Way
- a second 30' easement between lots 16 and 17 from Falmouth to Liberty Way (not shown but requested)
- the 110' x 200' and 110' x 100' drainage easement in the vicinity of the culvert crossing Penn Ave
- \*\* the City also requests a 20' (as opposed to a 10') drainage easement along the perimeter of the properties abutting Falmouth. A 10' public easement is of little value to the City as it needs more area in order to properly maintain the easement if the same became necessary.

All other drainage easements shall be noted as private easements.

## **VI. MOTIONS FOR THE BOARD TO CONSIDER**

### **Sidewalk Waiver - South Side of Wyoming Street, West Side of Liberty Way and South Side of Kansas Avenue**

On the basis of plans and material submitted by the applicant and on the basis of information contained in Planning Report #31-99A relevant to the standards Subdivision Review, the Planning Board finds:

- a. Extraordinary conditions do/do not exist (if yes, please specify those conditions); or
- b. Undue hardship will/will not result (if yes, please specify the hardship).

The Board further finds that the granting of the waiver of sidewalk on the southerly side of Wyoming Street, the westerly side of Liberty Way, and the southerly side of Kansas Avenue will/will not create potentially hazardous vehicle and pedestrian conflict or that it will/will not nullify the intent and purpose of the land development plan and the City ordinances.

As a result, the Board does/does not grant the request for a waiver of the sidewalk requirements.

The Planning Board also finds:

- i. That the proposed development is/is not in conformance with the Subdivision Ordinance of the Land Use Code

Potential Conditions of Approval:

- that the note which states "street frontage variance received" must be removed from the overall subdivision plat.
- The developer shall place \$15,000 in an interest bearing escrow account to be maintained by the City of Portland. These monies shall be deposited with the City within \_\_\_ days of the approval of the subdivision and shall remain for a period of five (5) years from the completion of all public improvements or the completion of seventy-five percent (75%) of all house lots in the approved subdivision, whichever occurs later. The escrow money shall be accessed by the City, after notice to the developer and a reasonable time to cure, if or when necessary to correct any on- or off-site improvements needed to resolve drainage problems associated with, or attributable to, the project. Determination of the appropriate use of said funds for such purpose shall be made by the Planning Authority, in consultation with Dept. of Public Works and consulting engineers as appropriate.
- That the developer provide documentation to the City which states that NRPA Approval has been obtained for DEP.
- That the plans be revised in accordance with the DRC's memo dated 10/1/99
- That the plans be revised in accordance with Public Works' memo dated 10/5/99 regarding manhole connections, inlet pipe between lots 16 and 17, curbing, and foundation connections.
- The drainage easements noted on the plan need to be identified as either Public or Private Easements as follows:

**The Pines @ Wyoming**

The only public easement should be the 30' easement shown on the plan..

**The Pines @ Kansas**

All drainage easements shown should be private. However, there is a question as to what the "Drainage Easement" noted on the southerly side of Kansas Ave references.

**The Pines @ Phases I and II**

Public easements should be as follows:

- the 50' x 50' drainage easement abutting lot 12
- the 30' easement from the Falmouth Town line to Liberty Way
- a second 30' easement between lots 16 and 17 from Falmouth to Liberty Way (not shown but requested)
- the 110' x 200' and 110' x 100' drainage easement in the vicinity of the culvert crossing Penn Ave
- \*\* the City also requests a 20' (as opposed to a 10') drainage easement along the perimeter of the properties abutting Falmouth. A 10' public easement is of little value to the City as it needs more area in order to properly maintain the easement if the same became necessary.

All other drainage easements shall be noted as private easements.

Attachments:

1. Peer Review of Wetland Delineation
2. Applicant's Submittal dated 9/9/99
3. Sewer Capacity Letter
4. Wetland Update Letter
5. Letter to Applicant dated 9/20/99
6. Letter regarding Virginia Street Basement Flooding
7. DRC's memo dated 10/1/99
8. Public Works' memo dated 10/5/99
9. Response to DRC's and Public Works' Memos
10. Submittal from Applicant dated 10/9/99
11. Plans
12. Letter from Resident

**PLANNING BOARD REPORT #3-00**

**THE PINES  
STREET VACATIONS  
THE PINES OF PORTLAND, INC., APPLICANT**

Submitted to:

Portland City Council  
Portland, Maine

January 24, 2000

## I. INTRODUCTION

The Pines of Portland, Inc. is requesting street vacation for portions of Kansas Avenue, Penn Avenue, Nevada Avenue, Jersey Avenue, Utah Street, Montana Street, Illinois Avenue and Vermont Avenue. In October, 1999 the Planning Board approved a 30-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 4 lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. A plan showing the streets to be vacated is included as Attachment 1e.

The subdivision was approved with two sections. Section I includes lots 1 through 11, 13 through 17, 20 through 23, 25 through 30, common open space and the residual (future development parcel) Lot 24. Lots 12, 18 and 19 are included in Section II. Lots 12, 18 and 19 were included in Section II, because the applicant did not wish to build Vermont Avenue and Jersey Avenue the entire frontage of the lots, as required by zoning. The applicants are requesting a street vacation for portions of Vermont Avenue and Jersey Avenue so they may develop these three lots. Portions of Kansas Avenue, Illinois Avenue, Utah Street, Nevada Avenue and Montana Street are located within Lot 24. Most of this area is located in wetland which would not be built on.

## II. UTILITIES

The Portland Water District has no objections to the vacation of the streets. The Portland Water District does have a 24" water main crossing Kansas Avenue and construction may not be allowed in this area. The Portland Water District does have easement rights in the street which was deeded to them when they purchased lots for the cross country water main in this area. Utility letters are included as Attachment 2.

Public Works has reviewed the street vacation request and does not object to the proposed vacation of the sections of Jersey Avenue, Illinois Avenue, Penn Avenue, Utah Street, Vermont Avenue and Nevada Avenue. Public Works is concerned with the request to vacate the specified sections of Montana Street and Kansas Avenue. There was a "Certificate of Taking of Property" document recorded in 1975 which provided a fifty (50) foot wide right of way for the Virginia-Carter Street Interceptor Sewer, between Nevada Avenue and Allen Avenue. This right of way was also designated for a future storm drain. Public Works will not endorse the proposed street vacations unless the City is deeded utility easements for those sections of Kansas Avenue and Montana Street designated for vacation. A potential condition of approval is that a public easement be provided for utilities for Kansas Avenue and Montana Street. Public Works' letter is included as Attachment 3.

## III. COMPREHENSIVE PLAN

While the Transportation Plan recommends the preservation and maintenance of a street network in the City, these street play an insignificant role in the transportation system. These streets all run to the Falmouth Town line and there is no possibility of connecting to streets in Falmouth.



#### IV. STREET VACATION

A public hearing was held by the Planning Board on January 11, 2000, at which time the Board voted unanimously (6-0) to recommend to the City Council that a portions of Kansas Avenue, Penn Avenue, Nevada Avenue, Jersey Avenue, Illinois Avenue, Utah Street, Vermont Avenue and Montana Street be vacated with the condition that a public easement shall be retained for utilities for sections of Kansas Avenue and Montana Street designated for vacation.

##### Attachments:

1. Petition for street vacation
2. Utility Letters
3. Public Works' Letter
4. Overall Subdivision Plan

AM. 1

December 22, 1999

PETITION FOR STREET VACATION

Mr. Joseph E. Gray, Jr., Director  
Planning & Urban Development  
Room 211  
389 Congress Street  
Portland, Maine 04101

Dear Mr. Gray:

In accordance with 23 M.R.S.A. Section 3027(1), I hereby petition to have that portion of see Exhibit A & B Street, so called, lying between see Exhibit A & B Street and \_\_\_\_\_ Street, all within the City of Portland, as more fully described on the attached Exhibit A, vacated by the City of Portland.

The street was dedicated by the recording on June 1926 of a Plan of Pines Subdivision) in Plan Book 17, Page 6 & 7 of the Cumberland County Registry of Deeds. The street was never accepted by the City.

I have enclosed copies of letters from the public utilities detailing whatever interests they have in the portion of streets listed in Exhibits A&B to be vacated. I am also enclosing, as Exhibit C hereto, a list of the names and addresses of all property owners and mortgagees in the subdivision, as well as the standard waiver and indemnification agreement provided by your office. Also enclosed is the \$500.00 fee that I understand is required to cover your administrative costs and costs of providing notice to said property owners and mortgagees.

I hereby request that you take all further action necessary to complete vacating the above-described street, and that you inform me should it become necessary for me to provide you with any further information, or to take any further action. I understand that the matter will be brought up before the Planning Board for workshop and public hearing, and that the Planning Board will make a recommendation to the City Council. Final action on the street vacation will be made by the City Council.

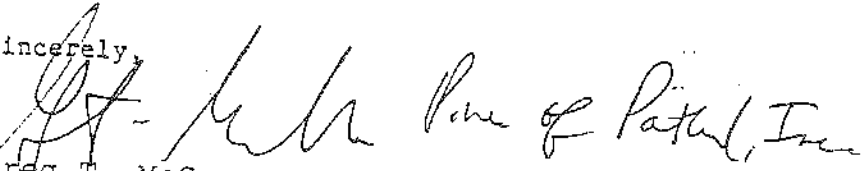
Sincerely,  
  
Greg T. McCormack  
Amy Mulkerin  
DBA Pines of Portland, Inc.

Exhibit A To Notice Of Proposed Street  
Vacation Dated December 29, 1999

1a

The Pines - Portland

Streets to be vacated

Strip 1 - That portion of Jersey Ave., so called, as shown on plan of "The Pines" said plan being recorded in the Cumberland County Registry of Deeds on June 17, 1926 in plan book 17, page 6 Cumberland County Registry of Deeds, which is bounded northerly by the southerly boundary lines of lots 1122 - 1123 - 1124 - 1125 - 1126 - 1127 - 1128 - 1129 - 1130 - 1131 - 1132 - 1133 and 1134 as shown on said plan, easterly by the Falmouth Town line, southerly by the northerly sideline of lots 1032 - 1033 - 1034 - 1035 - 1036 - 1037 - 1038 - 1039 - 1040 - 1041 - 1042 and 1043 as shown on said plan and bounded westerly by the easterly sideline of Montana Street.

Strip 2 - That portion of Penn Ave., so called, as shown on plan of "The Pines", said plan being recorded in the Cumberland County Registry of Deeds on June 17, 1926 in plan book 17, page 6 Cumberland County Registry of Deeds, which is bounded by 10 feet of the easterly southerly boundary of lot 1029 - lot 1030 and lot 1031 as shown on said plan, easterly by the Falmouth Town line, southerly by the northerly boundary line of lots 931 - lot 932 - lot 933 and 10 feet of the easterly northerly boundary line of lot 934, and bounded westerly by the remaining portion of Penn Ave.

Strip 3 - That portion of Vermont Ave bounded northerly by 10 feet of the easterly southern boundary of lot 927 - lot 928 - lot 929 and lot 930 as shown on said plan, easterly by the Falmouth town line, southerly by lot 831 - lot 832 and the easterly 10 feet of the northerly boundary line of lot 833 and bounded westerly by the remaining portion of Vermont Ave.

Strip 4 - That portion of Vermont Ave bounded northerly by southerly boundary line of lots 919 - 920 - 921 - 922 - 923 and lot 924, easterly by the remaining portion of Vermont Ave, southerly by northerly boundary lines of lot 836 - 837 - 838 - 839 - 840 and lot 841 as shown on said plan and bounded westerly by the easterly sideline of Montana Street.

Strip 5 - That portion of Montana Street bounded northerly by the southerly sideline of Kansas Ave, easterly by lot 1431 - lot 1385, Illinois Ave. - lot 1346 - lot 1300, Utah Street, lot 1268 - lot 1202 and Nevada Ave, southerly by the southerly sideline of Nevada Ave and westerly by Nevada Ave, lot 1203 lot 1267, Utah Street - lot 1301 - lot 1345 - Illinois Ave - lot 1386 and lot 1430 as shown on said plan.

Strip 6 - That portion of Nevada Ave bounded by the southerly boundary lines of lots 1202 - lot 1201 - lot 1200 - lot 1999 - lot 1198 - lot 1197 - lot 1196 - lot 1995 - lot 1194 - lot 1993 - lot 1992 - lot 1191 - lot 1190 - lot 1189 and lot 1188, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1187 - lot 1186 - lot 1185 - lot 1184 - lot 1183 - lot 1182 - lot 1181 - lot 1180 - lot 1179 - lot 1178 - lot 1177 - lot 1176 - lot 1175 and lot 1174 and westerly by the easterly sideline of Montana Street.

Strip 7 - That portion of Utah Street bounded northerly by the southerly boundary line of lots 1300 - lot 1299 - lot 1298 - lot 1297 - lot 1296 - lot 1295 - lot 1294 - lot 1293 - lot 1292 - lot 1291 - lot 1290 - lot 1289 - lot 1288 - lot 1287 - lot 1286 - lot 1285 and lot 1284, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1283 - lot 1282 - lot 1281 - lot 1280 - lot 1279 - lot 1278 - lot 1277 - lot 1276 - lot 1275 - lot 1274 - lot 1273 - lot 1272 - lot 1271 - lot 1270 - lot 1269 and lot 1268 and bounded westerly by the easterly sideline of Montana Street.

Strip 8 - That portion of Illinois Avenue bounded northerly by the southerly sideline of lots 1385 - lot 1384 - lot 1383 - lot 1382 - lot 1381 - lot 1380 - lot 1379 - lot 1378 - lot 1377, easterly by the Falmouth town line, southerly by the northerly boundary lines of lot 1359 - lot 1358 - lot 1357 - lot 1356 - lot 1355 - lot 1354 - lot 1353 - lot 1352 - lot 1351 - lot 1350 - lot 1349 - lot 1348 - lot 1347 and lot 1346 and westerly by the easterly sideline of Montana Street.

Strip 9 That portion of Kansas Ave, bounded northerly by the southerly boundary line of the easterly 1/2 of lot 1440 - lot 1439 and lot 1438, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1432 - lot 1431 - Montana Street - lot 1430 - lot 1429 and the easterly 1/2 of lot 1428 and westerly by the remainder of Kansas Ave.

NOTICE OF PROPOSED STREET VACATION

~~The municipal officers of~~ A petition has been filed with the municipal officers of the City of Portland ~~to vacate~~ the following (ways) ~~shown~~ upon a subdivision plan named The Pines Sections C&D, dated June 1926 and recorded in the Cumberland County Registry of Deeds, Plan Book 17, Pages 6&7.

List of way(s) to be vacated):

See Exhibit A attached hereto.

A map is attached as Exhibit B showing the ways to be vacated but any discrepancy between Exhibit A and B is controlled by Exhibit A.

If the municipal officers enter an order vacating ~~these ways~~ any person claiming an interest in ~~these ways~~ must, within one (1) year of the recording of the order, file a written claim thereof under oath in the Cumberland County Registry of Deeds and must, within one hundred eighty (180) days of the filing of the claim, commence an action in the Superior Court in Cumberland County in accordance with Maine Revised Statutes Title 23, Section 3027-A.

The City Council will hold a public hearing on the proposed vacation(s) on 02/23/00 at 7:30 p.m. in the City Council Chambers, City Hall, 389 Congress Street, Portland.

WAIVER AND INDEMNIFICATION

WHEREAS, Pines of 426 Forest Ave. Portland, Inc. of Portland has requested the City of Portland to vacate a certain proposed town way located in Pines Subdivision) pursuant to 23 M.R.S.A. Section 3027 et seq.;

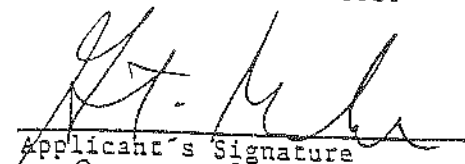
WHEREAS, the City of Portland as a condition precedent to any vacation of the proposed town ways requires a waiver of any claims which Pines of Portland, Inc. may have against the City for such vacation, and further, requires indemnification against any claims of third persons arising out of or resulting from the vacation of said proposed town way;

NOW THEREFORE, in consideration of the City of Portland vacating said proposed town way, Pines of Portland, Inc. for himself, his successors and assigns, agrees as follows:

1. Pines of Portland, Inc. hereby waives any claim for damages which he may now or hereafter have against the City of Portland arising out of or resulting from any vacation of such proposed town way by the City pursuant to 23 M.R.S.A. Section 3027 et seq.;

2. Pines of Portland, Inc. hereby agrees to indemnify and hold harmless the City of Portland against any claims by any third person against the City of Portland for damages arising out of or resulting from any vacation of such proposed town way by the City of Portland pursuant to said statute.

Dated: December 22, 1999

  
Applicant's Signature  
Pines of Portland, Inc.

1d

VACATION WAIVER AND INDEMNIFICATION

WHEREAS, Pines of Portland, Inc. of 426 Forest Ave.  
(Petitioner)  
Portland, Maine 04101

(Petitioner's Address)  
Pines of Portland, Inc. has requested the City of Portland (the "City") to vacate, pursuant to 30 M.R.S.A. § 3027 et seq., a certain (proposed Town way/portion of a proposed Town way) known as see Exhibit A & Exhibit B more (Name of proposed Town way) particularly described as in Exhibit A & Exhibit B attached. (Insert description or a reference to description attached hereto and hereby incorporated by reference)

WHEREAS, the City of Portland as a condition precedent to any vacation of the proposed Town way or portion thereof requires a waiver of any and all claims which the Petitioner may have against the City for such vacation, and further, requires indemnification against any and all claims of any and all third persons arising out of or resulting from the vacation of said proposed Town way or portion thereof;

NOW, THEREFORE, in consideration of the City vacating said proposed Town way or portion thereof, the Petitioner for itself, its successors, heirs and assigns, agrees as follows:

1. The Petitioner hereby waives any and all claims for damages which it may now or hereafter have against the City arising out of or resulting from any vacation of said proposed Town way or portion thereof by the City pursuant to 23 M.R.S.A. § 3027 et seq.;

2. The Petitioner hereby agrees to defend, indemnify and hold harmless the City against any and all claims by any and all third persons against the City for damages arising out of or resulting from any vacation of said proposed Town way or portion thereof by the City pursuant to 23 M.R.S.A. § 3027 et seq.

DATED: December 22, 1999.

BY: [Signature]  
(Petitioner's Signature)  
Gregory T. McCormack  
(Print Name)  
ITS: Pres. Pines of Portland, Inc.  
(Title)



Proposed Easements to be Retained by the City of Portland:

- Strip 5 Montana Street Section to be vacated.
- Strip 9 Kansas Street Section to be vacated (sewer in these sections).

Possible Easements to be Excepted and Reserved by the City of Portland:

“Excepting and Reserving to the City of Portland its successors and assigns forever, the right perpetually to enter at any and all times upon the above described strips of land to construct, repair, perpetually maintain through, under, and across said strip, conduits, pipe lines, sewers, storm drains with all the necessary fixtures and appurtenances; to trim, cut down, and remove bushes, grass, crops and trees to such extent is necessary for any of the above purposes.”



AH. 2

(207) 623-3521



Central Maine Power

General Office, 83 Edison Drive, Augusta, Maine 04336

December 28, 1999

Pines of Portland, Inc.  
C/o Greg McCormack  
426 Forest Avenue  
Portland, Maine 04101

RE: Proposed Paper Street Vacations

Dear Mr. McCormack:

As a follow-up to your December 16<sup>th</sup> letter, this letter will confirm that this Company has no facilities on Illinois Avenue, Utah Street, Nevada Avenue, Jersey Avenue, Penn Avenue, or Montana Street. We do however, have some facilities on Vermont Avenue.

If we should relocate our facilities on Vermont Avenue, it will be a billable service to you.

If you should have any further questions, please do not hesitate to contact me at 828-2821.

Sincerely,

David A. Foss  
Operations Supervisor

DAF/lb

Bell Atlantic - Maine  
5 Davis Farm Road  
Portland, ME 04103

Troy F. McDonald  
Manager - Right of Way

29



December 17, 1999

Greg McCormack  
Pine of Portland, Inc.  
426 Forest Avenue  
Portland, Maine 04101

*RE: New England Telephone Company Interest in Proposed Street Vacation, Portland, Maine*

Dear Mr. McCormack:

Per your request, our engineering department has review the proposed vacation of portions of Kansas Ave., Illinois Ave., Utah St., Nevada Ave., Jersey Ave., Penn Ave., Vermont Ave., and Montana St.

Please be aware that New England Telephone and Telegraph Company does not have any aerial or underground cables, wires or poles in the right-of-ways of the proposed vacation at the present time. We do not expect to utilize the above mentioned right-of-ways in the future and therefore have no concern with the proposed vacation.

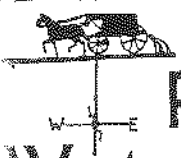
If you have questions, do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy F. McDonald".

Troy F. McDonald  
Right-of-Way Specialist

Cc: Diane Trafton -- Area Engineer



# Portland Water District

2/b

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

December 17, 1999

Mr. Gregory McCormack  
Pines of Portland, Inc.  
426 Forest Avenue  
Portland, Maine 04101

Re: Proposed Vacation of Streets

Dear Greg:

In response to your letter of December 16, 1999, the Portland Water District has no objections to the vacation of portions of the following streets as outlined in your letter: Kansas Avenue, Illinois Avenue, Utah Street, Nevada Avenue, Jersey Avenue, Penn Avenue, Vermont Avenue, and Montana Street.

We do have a 24" water main crossing a section of Kansas Avenue in the vicinity of where the proposed vacation of Kansas Avenue begins; however, we do have easement rights in the street deeded to us along with the lots that we purchased for the cross country water main.

If you need anything further, do not hesitate to call me at 774-5961 ext. 3057.

Sincerely yours,

PORTLAND WATER DISTRICT

*Norman V. Twaddel*

Norman V. Twaddel  
Right of Way Agent



December 20, 1999

**CITY OF PORTLAND**

Kandi Talbot, Senior Planner  
PORTLAND PLANNING DEPARTMENT  
Fourth Floor  
389 Congress Street  
Portland, ME 04104

**SUBJECT: Street Vacation Request For "The Pines"**

Dear Kandi:

Public Works received a mailing from Amy Mulkerin and Greg McCormack, of The Pines, Inc., on December 16, 1999. Their submittal was related to a "street vacation request" for portions of the following streets located within The Pines Subdivision:

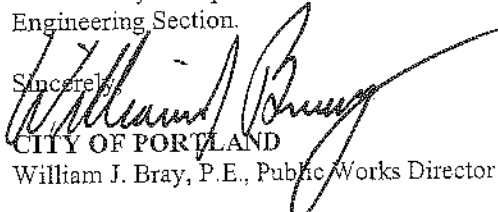
Kansas Ave.	Jersey Ave.	Illinois Ave.
Penn Ave.	Utah St.	Vermont Ave.
Nevada Ave.	Montana St.	

Public Works staff has reviewed the applicant's request for "street vacation" and offers the following comments:

1. We have no objection to the proposed vacation of the specified sections of Jersey Ave, Illinois Ave., Penn Ave., Utah St., Vermont Ave., and Nevada Ave.
2. Public Works does have concerns with the request to vacate the specified sections of Montana St. and Kansas Ave. On October 6, 1975 a "Certificate of Taking of Property" was recorded in the Cumberland County Registry of Deeds in Deed Book 3373, page 340. This document was recorded for purposes of providing a fifty (50) wide right of way, specifically Montana Street, for the Virginia-Carter Street Interceptor Sewer, between Nevada Ave. and Allen Ave. This right of way was also designated for a future storm drain. Another document was recorded at the Cumberland County Registry of Deeds, in Book 6652 and page 253, on December 28, 1984. This document, a "Quit Claim" Deed, grants the City "the perpetual right and easement to enter upon all of the streets, roads and ways, which have not heretofore been accepted as public ways.....and to construct, maintain and repair on, under and within said proposed streets, sewer pipes, mains, connectors and appurtenances. Although these two (2) documents assert the City's rights to work within both Kansas Ave. and Montana Street right of ways, Public Works will not endorse the proposed street vacations unless the City is deeded "utility easements for those sections of Kansas Ave. and Montana Street designated for vacation.

If you require additional information or have any questions, please contact Tony Lombardo, of our Engineering Section.

Sincerely,

  
CITY OF PORTLAND

William J. Bray, P.E., Public Works Director

Cc: Katherine A. Staples, P.E., City Engineer  
Anthony W. Lombardo, P.E., Project Engineer

REQUIREMENTS FOR THE REVIEW OF STREET VACATION

Done

- ✓ 1. \$500.00 fee paid with submission of petition including legal description of street. ✓
- ✓ 2. List of current lot owners and their mortgagees of record, together with their addresses, for the entire subdivision.
- ✓ 3. Executed waiver and indemnification [see attached sample].
- ✓ 4. Letters from utilities [see attached sample]. — sent 12/16/99
- ✓ 5. ~~Copies of any easements to be transferred.~~



Exhibit A To Notice Of Proposed Street  
Vacation Dated December 29, 1999

The Pines - Portland

Streets to be vacated

Strip 1 - That portion of Jersey Ave., so called, as shown on plan of "The Pines", said plan being recorded in the Cumberland County Registry of Deeds on June 17, 1926 in plan book 17, page 6 Cumberland County Registry of Deeds, which is bounded northerly by the southerly boundary lines of lots 1122 - 1123 - 1124 - 1125 - 1126 - 1127 - 1128 - 1129 - 1130 - 1131 - 1132 - 1133 and 1134 as shown on said plan, easterly by the Falmouth Town line, southerly by the northerly sideline of lots 1032 - 1033 - 1034 - 1035 - 1036 - 1037 - 1038 - 1039 - 1040 - 1041 - 1042 and 1043 as shown on said plan and bounded westerly by the easterly sideline of Montana Street.

Strip 2 - That portion of Penn Ave., so called, as shown on plan of "The Pines", said plan being recorded in the Cumberland County Registry of Deeds on June 17, 1926 in plan book 17, page 6 Cumberland County Registry of Deeds, which is bounded by 10 feet of the easterly southerly boundary of lot 1029 - lot - 1030 and lot 1031 as shown on said plan, easterly by the Falmouth Town line, southerly by the northerly boundary line of lots 931 - lot 932 - lot - 933 and 10 feet of the easterly northerly boundary line of lot 934, and bounded westerly by the remaining portion of Penn Ave.

Strip 3 - That portion of Vermont Ave bounded northerly by 10 feet of the easterly southern boundary of lot 927 - lot 928 - lot 929 and lot 930 as shown on said plan, easterly by the Falmouth town line, southerly by lot 831 - lot 832 and the easterly 10 feet of the northerly boundary line of lot 833 and bounded westerly by the remaining portion of Vermont Ave.

Strip 4 - That portion of Vermont Ave bounded northerly by southerly boundary line of lots 919 - 920 - 921 - 922 - 923 and lot 924, easterly by the remaining portion of Vermont Ave, southerly by northerly boundary lines of lot 836 - 837 - 838 - 839 - 840 and lot 841 as shown on said plan and bounded westerly by the easterly sidcline of Montana Street.

Strip 5 - That portion of Montana Street bounded northerly by the southerly sideline of Kansas Ave, easterly by lot 1431 - lot 1385, Illinois Ave. - lot 1346 - lot 1300, Utah Street, lot 1268 - lot 1202 and Nevada Ave, southerly by the southerly sideline of Nevada Ave and westerly by Nevada Ave, lot 1203 lot 1267, Utah Street - lot 1301 - lot 1345 - Illinois Ave - lot 1386 and lot 1430 as shown on said plan.

Strip 6 - That portion of Nevada Ave bounded by the southerly boundary lines of lots 1202 - lot 1201 - lot 1200 - lot 1999 - lot 1198 - lot 1197 - lot 1196 - lot 1995 - lot 1194 - lot 1993 - lot 1992 - lot 1191 - lot 1190 - lot 1189 and lot 1188, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1187 - lot 1186 - lot 1185 - lot 1184 - lot 1183 - lot 1182 - lot 1181 - lot 1180 - lot 1179 - lot 1178 - lot 1177 - lot 1176 - lot 1175 and lot 1174 and westerly by the easterly sideline of Montana Street.

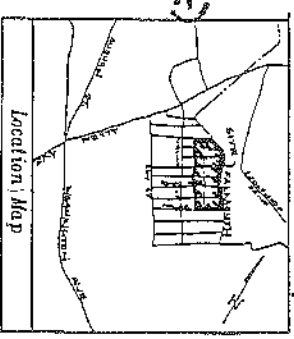
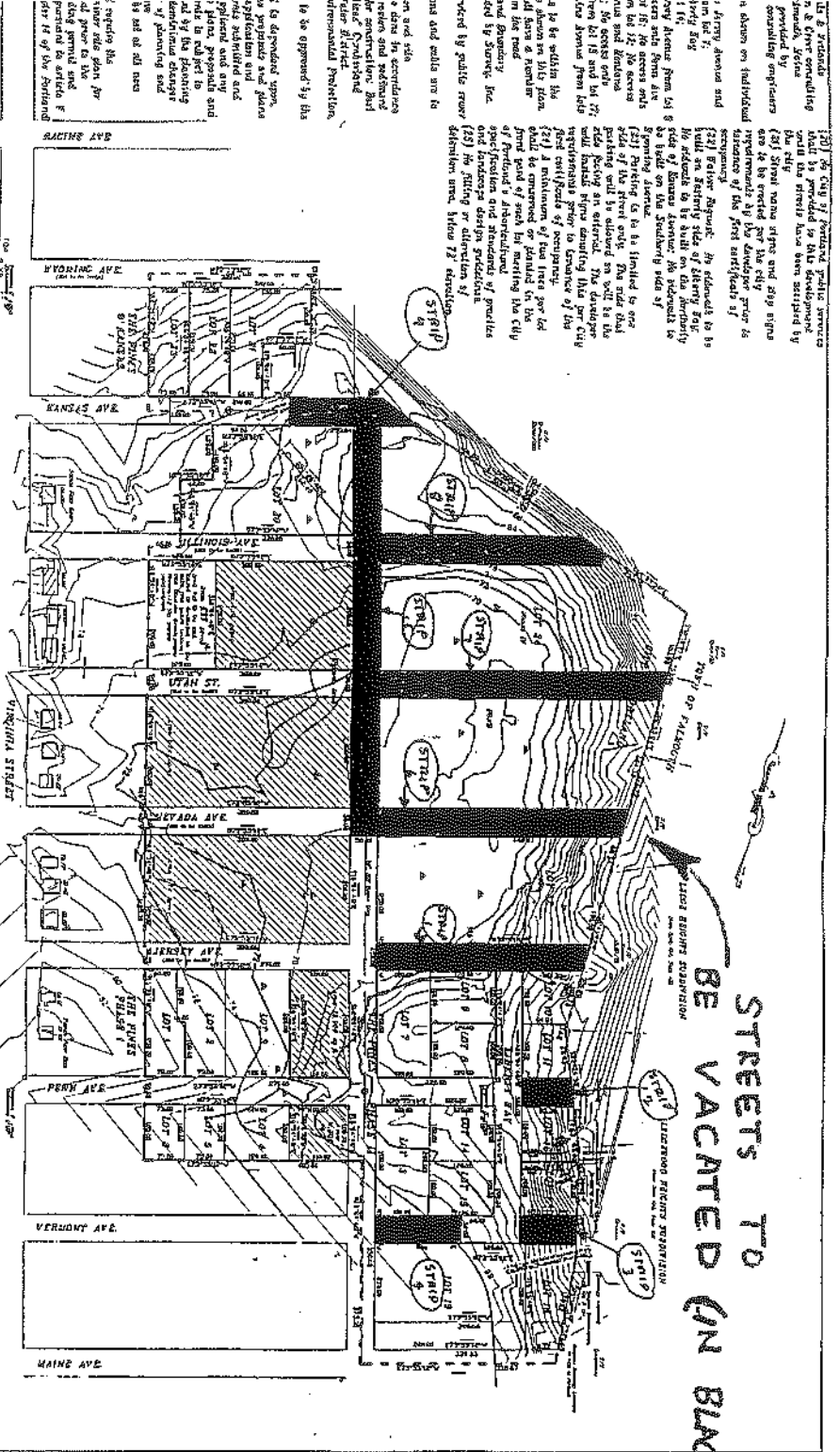
Strip 7 - That portion of Utah Street bounded northerly by the southerly boundary line of lots 1300 - lot 1299 - lot 1298 - lot 1297 - lot 1296 - lot 1295 - lot 1294 - lot 1293 - lot 1292 - lot 1291 - lot 1290 - lot 1289 - lot 1288 - lot 1287 - lot 1286 - lot 1285 and lot 1284, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1283 - lot 1282 - lot 1281 - lot 1280 - lot 1279 - lot 1278 - lot 1277 - lot 1276 - lot 1275 - lot 1274 - lot 1273 - lot 1272 - lot 1271 - lot 1270 - lot 1269 and lot 1268 and bounded westerly by the easterly sideline of Montana Street.

Strip 8 - That portion of Illinois Avenue bounded northerly by the southerly sideline of lots 1385 - lot 1384 - lot 1383 - lot 1382 - lot 1381 - lot 1380 - lot 1379 - lot 1378 - lot 1377, easterly by the Falmouth town line, southerly by the northerly boundary lines of lot 1359 - lot 1358 - lot 1357 - lot 1356 - lot 1355 - lot 1354 - lot 1353 - lot 1352 - lot 1351 - lot 1350 - lot 1349 - lot 1348 - lot 1347 and lot 1346 and westerly by the easterly sideline of Montana Street.

Strip 9 That portion of Kansas Ave. bounded northerly by the southerly boundary line of the easterly 1/2 of lot 1440 - lot 1439 and lot 1438, easterly by the Falmouth town line, southerly by the northerly boundary line of lots 1432 - lot 1431 - Montana Street - lot 1430 - lot 1429 and the easterly 1/2 of lot 1428 and westerly by the remainder of Kansas Ave.

Exhibit B To Notice of Proposed Street Vacation Dated December 29, 1999

**STREETS TO BE VACATED (IN BLACK)**



**NOTES:**

- (1) Header Plan showing extents of THE CITY OF PORTLAND and the proposed street vacations and lands remaining for future development.
- (2) Maps and Boundaries have been adjusted to conform with street line implementation provided by City of Portland, July, 1999
- (3) AREAS:
  - Phase I 2.43 Acres
  - Phase II 4.16 Acres
  - Phase III 6.83 Acres
  - Phase IV 2.37 Acres
- Remaining open space 22.49 Acres
- Total 29.93 Acres
- Remaining To be retained 0.57 Acres
- (4) Jurisdiction: N-3
- (5) Bench Mark Elevation: Appleton Run @ Highway 58 and Penn Ave. Elev. 70.79

Approved By City of Portland, Maine  
Planning Board

Date: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

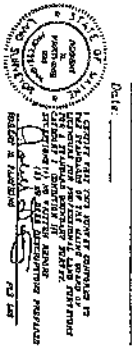
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\_\_\_\_\_

**THE PINES**  
Portland, Maine  
For: A & G Associates  
426 Forest Avenue  
Portland, Maine  
Developer  
Amy K. Walker  
Gregory T. McCormack  
(Owner's of Record)

Survey By: **SUREX, INC.**  
P.O. Box 210  
Randolph, Me.  
Plan Prepared By: **J.T.T.**  
@ **SUREX, Inc.**  
P.O. Box 210  
Randolph, Me.  
JULY, 1999



Recording Information:  
Plan Returned to File, Book \_\_\_\_\_, Page \_\_\_\_\_  
Commenced County Registry of Deeds \_\_\_\_\_, Year \_\_\_\_\_

Scale: 1" = 100'

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100. City of Portland, Maine



NOTICE OF PROPOSED STREET VACATION

~~the xxxxxxxxxx offices xxxxxx~~ A petition has been filed with the municipal officers of) the City of Portland ~~xxxxxxx~~ to vacate the following (ways) ~~xxxxx~~ shown upon a subdivision plan named The Pines Sections C&D dated June 1926 and recorded in the Cumberland County Registry of Deeds, Plan Book 17, Pages 6&7.

List of way(s) to be vacated):

See Exhibit A attached hereto.

A map is attached as Exhibit B showing the ways to be vacated but any discrepancy between Exhibit A and B is controlled by Exhibit A.

If the municipal officers enter an order vacating ~~these ways xxxxxxxxxx~~ any person claiming an interest in ~~these ways xxxxxxxxxx~~ must, within one (1) year of the recording of the order, file a written claim thereof under oath in the Cumberland County Registry of Deeds and must, within one hundred eighty (180) days of the filing of the claim, commence an action in the Superior Court in Cumberland County in accordance with Maine Revised Statutes Title 23, Section 3027-A.

The City Council will hold a public hearing on the proposed vacation(s) on 02/23/00 at 7:30 p.m. in the City Council Chambers, City Hall, 389 Congress Street, Portland.

WAIVER AND INDEMNIFICATION

WHEREAS, Pines of 426 Forest Ave.  
Portland, Inc. of Portland has requested the City of  
Portland to vacate a certain proposed town way located in Pines  
Subdivision) pursuant to 23 M.R.S.A. Section 3027 et seq.;

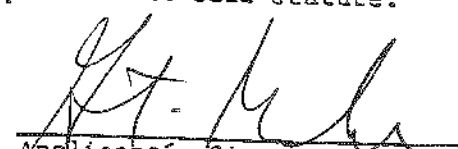
WHEREAS, the City of Portland as a condition precedent to any vacation  
of the proposed town ways requires a waiver of any claims which Pines of Portland, Inc.  
may have against the City for such vacation, and further, requires  
indemnification against any claims of third persons arising out of or  
resulting from the vacation of said proposed town way;

NOW THEREFORE, in consideration of the City of Portland vacating said  
proposed town way, Pines of Portland, Inc. for himself, his successors and  
assigns, agrees as follows:

Pines of  
1. Portland, Inc. hereby waives any claim for damages which he  
may now or hereafter have against the City of Portland arising out of or  
resulting from any vacation of such proposed town way by the City pursuant  
to 23 M.R.S.A. Section 3027 et seq.;

Pines of  
2. (Portland, Inc) hereby agrees to indemnify and hold harmless  
the City of Portland against any claims by any third person against the City  
of Portland for damages arising out of or resulting from any vacation of  
such proposed town way by the City of Portland pursuant to said statute.

Dated: December 22, 1999

  
Applicant's Signature

Pines of Portland, Inc.

VACATION WAIVER AND INDEMNIFICATION

WHEREAS, Pines of Portland, Inc. of 426 Forest Ave.  
(Petitioner)  
Portland, Maine 04101  
Pines of \_\_\_\_\_ (Petitioner's Address)  
(Portland, Inc. has requested the City of Portland (the  
"City") to vacate, pursuant to 30 M.R.S.A. § 3027 et seq.; a  
certain (proposed Town way/portion of a proposed Town way)  
known as see Exhibit A & Exhibit B more  
\_\_\_\_\_  
(Name of proposed Town way)  
particularly described as in Exhibit A & Exhibit B attached.  
\_\_\_\_\_  
(Insert description or a reference  
to description attached hereto and hereby incorporated by  
\_\_\_\_\_  
reference)

WHEREAS, the City of Portland as a condition precedent to any vacation of the proposed Town way or portion thereof requires a waiver of any and all claims which the Petitioner may have against the City for such vacation, and further, requires indemnification against any and all claims of any and all third persons arising out of or resulting from the vacation of said proposed Town way or portion thereof;

NOW, THEREFORE, in consideration of the City vacating said proposed Town way or portion thereof, the Petitioner for itself, its successors, heirs and assigns, agrees as follows:

1. The Petitioner hereby waives any and all claims for damages which it may now or hereafter have against the City arising out of or resulting from any vacation of said proposed Town way or portion thereof by the City pursuant to 23 M.R.S.A. § 3027 et seq.;
2. The Petitioner hereby agrees to defend, indemnify and hold harmless the City against any and all claims by any and all third persons against the City for damages arising out of or resulting from any vacation of said proposed Town way or portion thereof by the City pursuant to 23 M.R.S.A. § 3027 et seq.

DATED: December 22, 1999.

BY: [Signature]  
(Petitioner's Signature)  
Gregory T. McCormack  
(Print Name)  
ITS: Pres. Pines of Portland, Inc.  
(Title)

Bell Atlantic - Maine  
5 Davis Farm Road  
Portland, ME 04103

Troy F. McDonald  
Manager - Right of Way



December 17, 1999

Greg McCormack  
Pine of Portland, Inc.  
426 Forest Avenue  
Portland, Maine 04101

*RE: New England Telephone Company Interest in Proposed Street Vacation, Portland, Maine*

Dear Mr. McCormack:

Per your request, our engineering department has review the proposed vacation of portions of Kansas Ave., Illinois Ave., Utah St., Nevada Ave., Jersey Ave., Penn Ave., Vermont Ave., and Montana St.

Please be aware that New England Telephone and Telegraph Company does not have any aerial or underground cables, wires or poles in the right-of-ways of the proposed vacation at the present time. We do not expect to utilize the above mentioned right-of-ways in the future and therefore have no concern with the proposed vacation.

If you have questions, do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy F. McDonald".

Troy F. McDonald  
Right-of-Way Specialist

Cc: Diane Trafton - Area Engineer



# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

December 17, 1999

Mr. Gregory McCormack  
Pines of Portland, Inc.  
426 Forest Avenue  
Portland, Maine 04101

Re: Proposed Vacation of Streets

Dear Greg:

In response to your letter of December 16, 1999, the Portland Water District has no objections to the vacation of portions of the following streets as outlined in your letter: Kansas Avenue, Illinois Avenue, Utah Street, Nevada Avenue, Jersey Avenue, Penn Avenue, Vermont Avenue, and Montana Street.

We do have a 24" water main crossing a section of Kansas Avenue in the vicinity of where the proposed vacation of Kansas Avenue begins; however, we do have easement rights in the street deeded to us along with the lots that we purchased for the cross country water main.

If you need anything further, do not hesitate to call me at 774-5961 ext. 3057.

Sincerely yours,

PORTLAND WATER DISTRICT

*Norman V. Twaddel*

Norman V. Twaddel  
Right of Way Agent

Proposed Easements to be Retained by the City of Portland:

Strip 5 Montana Street Section to be vacated.

Strip 9 Kansas Street Section to be vacated (sewer in these sections).

Possible Easements to be Excepted and Reserved by the City of Portland:

“Excepting and Reserving to the City of Portland its successors and assigns forever, the right perpetually to enter at any and all times upon the above described strips of land to construct, repair, perpetually maintain through, under, and across said strip, conduits, pipe lines, sewers, storm drains with all the necessary fixtures and appurtenances; to trim, cut down, and remove bushes, grass, crops and trees to such extent is necessary for any of the above purposes.”

CITY OF PORTLAND, MAINE  
PLANNING BOARD

---

John H. Carroll, Chair  
Jaimey Caron, Vice Chair  
Kenneth M. Cole III  
Cyrus Y. Hagge  
Deborah Krichels  
Erin Rodriguez  
Mark Malone

February 1, 2000

Amy Mulkerin  
Greg McCormack  
The Pines of Portland, Inc.  
426 Forest Avenue  
Portland, ME 04101

RE: The Pines


Dear Ms. Mulkerin & Mr. McCormack:

On January 11, 2000 the Planning Board voted unanimously (6-0, Cole absent) to recommend to the City Council that portions of Kansas Avenue, Penn Avenue, Nevada Avenue, Jersey Avenue, Illinois Avenue, Utah Street, Vermont Avenue and Montana Street be vacated.

The City Council is tentatively scheduled to vote on the rezoning on Wednesday, February 23, 2000.

If there are any questions, please contact the Planning Staff.

Sincerely,

  
Jaimey Caron, Chair  
Portland Planning Board

cc: Joseph E. Gray, Jr., Director of Planning and Urban Development  
Alexander Jaegerman, Chief Planner  
— Kandice Talbot, Planner  
P. Samuel Hoffses, Building Inspector  
Marge Schmuckal, Zoning Administrator  
Tony Lombardo, Project Engineer  
Development Review Coordinator  
William Bray, Director of Public Works  
Nancy Knauber, Associate Engineer  
Jeff Tarling, City Arborist  
Charlie Lane, Associate Corporation Counsel  
Lt. Gaylen McDougall, Fire Prevention  
Inspection Department  
Lee Urban, Director of Economic Development  
Don Hall, Appraiser, Assessor's Office  
Susan Doughty, Assessor's Office  
Approval Letter File

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Corporation Counsel  
Gary C. Wood



Associate Counsel  
Charles A. Lane  
Elizabeth L. Boynton  
Donna M. Katsiaficas  
Penny Littell

**CITY OF PORTLAND**

November 1, 1999

Via telefax: 871-8695

To: Amy Mulkerin and Greg McCormick

Dear Amy and Greg:

This correspondence is in response to your questions to me on October 27, 1999 dealing with the street vacation process. In essence, you wanted to know how broad a notice you must give in order to properly inform those who may have an interest in the streets you are proposing to vacate. Although I am uncertain as to the specific streets you may wish to vacate, from a review of the 1926 plat, it appears the property you own (and where the streets you wish to vacate are located) is limited to that land depicted on plats identified as The Pines, Section "C" Revised, made for Robert T. Hayden 11/6/69 and Section "D" Revised, owned by the A.H. Chapman Land Co., June 1926. You should verify this with your attorney.

As far as the type of notice to be given, you need only send notice by first class mail.

I trust this answers your questions.

Sincerely,

Penny Littell  
Associate Corporation Counsel

cc: Kandi Talbot, Planner  
Alex Jaegerman, Chief Planner

O:\WP\PENNY\UTRS\MULK1027.WPD





Northern Utilities, Inc.

December 27, 1999

Pines of Portland, Inc.  
c/o Greg McCormack  
426 Forest Avenue  
Portland ME 04101

Dear Mr. McCormack:

Northern Utilities, Inc. has no interest in the paper streets within "The Pines" which are listed below:

Sections of	Kansas Ave.	Jersey Ave.
	Illinois Ave.	Penn Ave.
	Utah St.	Vermont Ave.
	Nevada Ave.	Montana St.

Sincerely,

Denise T. Lawsore  
Sales Representative

**PLANNING BOARD REPORT #1-00**

**THE PINES  
STREET VACATIONS  
THE PINES OF PORTLAND, INC., APPLICANT**

Submitted to:

Portland Planning Board  
Portland, Maine

January 11, 2000

## **I. INTRODUCTION**

The Pines of Portland, Inc. is requesting street vacation for portions of Kansas Avenue, Penn Avenue, Nevada Avenue, Jersey Avenue, Utah Street, Montana Street, Illinois Avenue and Vermont Avenue. In October, 1999 the Board approved a 29-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 4 lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. A plan showing the streets to be vacated is included as Attachment 1c.

As the Board may recall, the subdivision was approved with two sections. Section I includes lots 1 through 11, 13 through 17, 20 through 23, 25 through 30, common open space and the residual (future development parcel) Lot 24. Lots 12, 18 and 19 are included in Section II. Lots 12, 18 and 19 were included in Section II, because the applicant did not wish to build Vermont Avenue and Jersey Avenue the entire frontage of the lots, as required by zoning. The applicants are requesting a street vacation for portions of Vermont Avenue and Jersey Avenue so they may develop these three lots. Portions of Kansas Avenue, Illinois Avenue, Utah Street, Nevada Avenue and Montana Street are located within Lot 24. Most of this area is located in wetland which would not be built on.

492 notices were sent to area residents. A legal ad appeared in the January 3rd and 4th editions of the Portland Press Herald.

## **II. UTILITIES**

The Portland Water District has no objections to the vacation of the streets. The Portland Water District does have a 24" water main crossing Kansas Avenue and construction may not be allowed in this area. The Portland Water District does have easement rights in the street which was deeded to them when they purchased lots for the cross country water main in this area. Utility letters are included as Attachment 2.

Public Works has reviewed the street vacation request and does not object to the proposed vacation of the sections of Jersey Avenue, Illinois Avenue, Penn Avenue, Utah Street, Vermont Avenue and Nevada Avenue. Public Works is concerned with the request to vacate the specified sections of Montana Street and Kansas Avenue. There was a "Certificate of Taking of Property" document recorded in 1975 which provided a fifty (50) foot wide right of way for the Virginia-Carter Street Interceptor Sewer, between Nevada Avenue and Allen Avenue. This right of way was also designated for a future storm drain. Public Works will not endorse the proposed street vacations unless the City is deeded utility easements for those sections of Kansas Avenue and Montana Street designated for vacation. A potential condition of approval is that a public easement be provided for utilities for Kansas Avenue and Montana Street. Public Works' letter is included as Attachment 3.

## **III. COMPREHENSIVE PLAN**

While the Transportation Plan recommends the preservation and maintenance of a street network in the City, these street play an insignificant role in the transportation system. These streets all run to the Falmouth Town line and there is not possibility of connecting to streets in Falmouth.

#### IV. MOTIONS FOR THE BOARD TO CONSIDER

On the basis of the plans and petition submitted by the applicant and on the basis of information contained in Planning Report #1-00, the Planning Board recommends the following to the City Council:

- i. That the vacation of portions of Kansas Avenue, Penn Avenue, Nevada Avenue, Jersey Avenue, Illinois Avenue, Utah Street, Vermont Avenue and Montana Street [is/is not] in conformance with the Comprehensive Plan of the City of Portland.

Potential Condition of Approval:

- that a public easement shall be retained for utilities for the sections of Kansas Avenue and Montana Street designated for vacation.

Attachments:

1. Petition for street vacation
2. Utility Letters
3. Public Works' Letter
4. Overall Subdivision Plan

*who will own the balance of the land?*

CITY OF PORTLAND, MAINE  
MEMORANDUM

*Greg McCowan  
Amy Mulhearn  
Steve Stearns - P & G*

**TO:** Chair Carroll and Members of the Portland Planning Board  
**FROM:** Kandice Talbot, Planner  
**DATE:** July 13, 1999  
**RE:** Wyoming Avenue, Kansas Avenue, and Penn Avenue Subdivision

*What is on the other side of the line?*

**Introduction**

A & G Associates is requesting workshop review for a 29-lot single family subdivision. This subdivision consists of a 19-lot phase within the vicinity of Penn Avenue, a 4-lot phase within the vicinity of Kansas Avenue and a 6-lot phase within the vicinity of Wyoming Street. A vicinity map is included as Attachment 1.

**Background**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. Corporation Counsel feels that because the applicant is combining lots it would need to be reviewed under the subdivision ordinance, thus requiring Planning Board Review.

At the previous Planning Board Workshop, staff recommended that the applicant supply the City with an overall drainage plan for the area bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth Line. A memo is included as Attachment 7 outlining the requirements of this overall drainage plan.

**The Pines Master Plan**

In our letter to the applicant of July 2nd (Attachment 8), we requested a plat showing the entire subdivision. The applicant has submitted an overall plan showing three proposed phases of The Pines Subdivision. It is not clear from this submission whether there will be further development of the subdivision acreage beyond the three phases requested for approval at this time. The overall plan should present, for the entire acreage, the information listed under plat requirements of Section 14-496 a through x. Given the acreage involved, we are concerned about the overall drainage system as it affects the watershed, upstream throughout the site, and downstream. As an old platted subdivision, the street layout from 1926 will be utilized in part, some platted streets will not be improved, and some new streets are proposed. We need to have an overall pedestrian and vehicular circulation plan showing how the roadways will be built incrementally and interconnected as the project proceeds in phases and to completion.

An overall drainage analysis was just received and is included as Attachment 9. At this time, the DRC and Public Works have not had a chance to review the analysis.

The drainage analysis states that "in the future Kansas Ave. will be extended to access the area along the Falmouth-Portland boundary." Staff is requesting that the master plan show all areas of future development, along with any proposed roads. The master plan should show any proposed pedestrian access or open space. Any additional submissions listed in 14-496(x) are a construction plan of the sequence of construction which should include a longer range phasing plan. Also buffer strips and natural areas and features must be shown, such as the wetlands and pond. The applicant has indicated area will be preserved as a conservation area. The locations of these should be shown, and the ownership, access, and use of these areas should be addressed.

Since most of the proposed lots front on more than one street, the Planning Board may wish to place a condition that states that all lots fronting on two streets may only have access from one street.

### Wyoming Avenue

This six lot single family phase is bounded by Kansas Avenue, Virginia Street, and Racine Avenue. The applicant is proposing to extend Wyoming Avenue approximately 370 feet to the east. The street will include storm drains, sewer, water and underground electric. There is also a small stream that crosses the subdivision. A 30" diameter pipe will be installed to convey the flow of the stream under the road. This subdivision is within the R-3 zone. The lot sizes range from 9,000 sq. ft. to 24,500 sq. ft.

*reference to the road*  
The applicant is proposing sidewalk and granite curb on one side of the street. The applicant is also not proposing any esplanade between the street and the sidewalk. Public Works has reviewed this request and does not object to the construction of a sidewalk on only one side of the street. They would prefer this sidewalk on the northerly side of Wyoming Avenue. Public Works, however, is requiring the applicant to include a four foot wide vegetated esplanade on the northerly side of Wyoming Avenue. Public Works' Memo is included as Attachment 5.

The applicant is proposing that the sites sheetflow to the rear of the properties. At this time it appears that the submittal for the Wyoming Avenue Phase is complete.

### Penn Avenue

*submit 1/27/17*  
This 19 lot single family phase is bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Falmouth line. The applicant is proposing to extend Penn Avenue approximately 500 feet to the west. The applicant is then proposing to build a cross street to connect to property along Vermont Avenue and Jersey Avenue. This subdivision is within the R-3 zone. The lot sizes will range from 10,094 sq. ft. to 84,118 sq. ft. The applicant will need to submit further information required by subdivision ordinance regarding building envelopes, tree preservation, utility capacity, etc. Currently staff is reviewing the submittal for the Penn Avenue Phase.

## Kansas Avenue

This 4 lot single family phase is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street. The applicant is proposing to extend Kansas Avenue approximately 250 feet to the west. This subdivision is within the R-3 zone. The lot sizes will range from 15,000 sq. ft. to 58,000 sq. ft. The applicant will need to submit further information required by subdivision ordinance regarding road design, building envelopes, tree preservation, utility capacity, etc. Currently staff is reviewing the submittal for the Kansas Avenue Phase.

### Attachments:

1. Vicinity Map
2. Corporation Counsel's Letter to Applicant's Attorney
3. Wyoming Avenue Stormwater Report
4. Applicant's Request for Sidewalk Waiver along Wyoming Avenue
5. Public Works' Memo dated 5/18/99
6. Letter from Murray, Plumb & Murray dated 7/2/99
7. Development Review Coordinator's Request for Overall Drainage Plan
8. Letter from Staff dated 7/2/99
9. Drainage Analysis
10. Letter from Resident
11. Master Plan
12. Wyoming Avenue Plans
13. Kansas Avenue Plans
14. Penn Avenue Plans
15. Drainage Analysis Plans

12-1-99

TO: JANET MOORE

FROM: GREG McCORMACK

Closings "The Pines"

<u>lot #</u>	<u>New Owners</u>	<u>Closing DATE</u>
--------------	-------------------	---------------------

1	✓ JAMES + DEBRA MATHEWS - 80 Penn Ave Portland 04103	8-12-99
---	--	---------

14975/194 mtg: First Financial Mortgage Corp

ND ADDR - 14975/205 Assn: Crescent Mortgage Services Inc

2	✓ STEPHEN + GLENNA IRVINE - 86 Penn Ave Portland 04103	9-27-99
---	--	---------

① 15073/109 mtg: First Financial Mortgage Corp

15073/122 Assn: Ohio Savings Bank

ND ADDR - ② 15074/166 mtg: Peoples Heritage Savings Bank 4-23-99

3	✓ ROBERT + JANA CURRIAN - 92 Penn Ave Portland 04103	
---	--	--

14704/161 mtg: First Financial Mortgage Corp

ALREADY ONE - 14704/172 Assn: Ohio Savings Bank

4	✓ Richard + Roma Bonnin - 91 Penn Ave Portland 04103	11-1-99
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15146/36 mtg: First Financial Mortgage Corp

ALREADY ONE - 15146/47 Assn: Ohio Savings Bank

5	✓ E. Peter + Margaret Buckley - 85 Penn Ave Portland 04103	7-23-99
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Edward

① 14928/254 mtg: First Financial Mortgage Corp

ALREADY ONE - 14928/265 Assn: Ohio Savings Bank

ND ADDR - ② 15063/301 mtg: Fleet Bank (5701 Horatio St. Utica NY 13502)



Due to the relatively large scale and long-term development of the project, we recommend that a stormwater management master plan be prepared at this time for the whole area to be developed. The plan would show the overall existing watershed of the project, existing topography, existing City stormwater infrastructure that is part of this watershed, existing limits of wetlands and soil types. The plan would show proposed subcatchments at each phase, locations for proposed stormwater detention facilities, street storm drain alignments, and proposed drainage courses with direction of flow based on the existing terrain and the anticipated phasing of the project. Preliminary road profiles would need to be developed to allow identification of probable road culvert crossings and lot storm drain inlet connection points into the road storm drain system, as well as probable common rear lot drainage easements. Detailed stormwater analysis for the stormwater management master plan is not suggested at this time. However, simplified stormwater analysis would likely be needed to develop sizes of the detention facilities for lot planning purposes of the development. Detailed stormwater analysis would occur during detailed design for each phase and would build on the previous work for consistency of analysis. The stormwater management master plan document submitted to the City would be plans at each phase showing the information mentioned above, with a narrative discussing the findings of the stormwater management planning analysis for the existing and proposed stormwater conditions.

The watershed upgradient of The Pines and associated with the unnamed stream and tributary Cobb Road and a tributary that crosses Virginia Street. The unnamed stream includes a pond located upgradient and abutting Falmouth town line. The unnamed stream drains into Casco Bay at the Portland-Railroad and Interstate 295. The stream crosses Cobb Road, Middle Road, the St. Lawrence & Atlantic and Casco Bay. The stream meanders through the area in a southeasterly and easterly direction to Falmouth that the undeveloped area of The Pines is approximately 35 acres in size. There is an unnamed stream that meanders through the area in a southeasterly and easterly direction to Falmouth. The watershed upgradient of The Pines and associated with the unnamed stream and tributary appears to include the westerly side of Cobb Road in Falmouth, northwesterly of Allen Avenue to Pinloch Drive, off of Summit Street, and the Moore School area. Several residential homes at the ends of Vermont and Maine Avenues are downgradient of The Pines that directly abut the edge of the unnamed stream. It is known that some intermittent flooding does occur in the back yards of two of the properties on Vermont Avenue during certain storm events.

As requested, a review of the overall drainage issue associated with the 1925 subdivision known as The Pines has been completed. The review included a cursory site reconnaissance and review of the Portland West Quadrangle 7.5-minute series USGS map of the area. Based on reduced copies of the original subdivision plat provided by the applicant, it appears that the undeveloped area of The Pines is approximately 35 acres in size. There is an unnamed stream that meanders through the area in a southeasterly and easterly direction to Falmouth and Casco Bay. The stream crosses Cobb Road, Middle Road, the St. Lawrence & Atlantic Railroad and Interstate 295. The unnamed stream drains into Casco Bay at the Portland-Falmouth town line. The unnamed stream includes a pond located upgradient and abutting Cobb Road and a tributary that crosses Virginia Street.

# MEMORANDUM

TO: Kandi Talbot, Planner  
 FROM: Jim Wendel, P.E., Development Review Coordinator  
 DATE: June 7, 1999  
 RE: The Pines Subdivision, North Deering

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

1000 GARDNER ASSOCIATES, INC.  
 CONSULTING ENGINEERS  
 778 MAIN STREET  
 SUITE 100  
 SOUTH PORTLAND, MAINE 04106  
 TEL: 207 255 1121  
 FAX: 207 879 0806

**From:** Gaylen McDougall  
**To:** Kandi Talbot  
**Date:** Tue, May 23, 2000 1:25 PM  
**Subject:** Re: The Pines Lot 24

I have reviewed the plan. The width of the driveway must meet public safety standards. The driveway can be reduced where the road goes over the wetlands. The depth of the driveway has to be sufficient to carry the load of fire apparatus. This has to be evaluate by their engineer. The only way that I can deviate from the standards is thru a request to the chief of the department from the developer. I would need this in writing with a plan for the chief to review.

Mac

>>> Kandi Talbot 05/18 1:12 PM >>>

Did you have a chance to look at the plan that I sent you for the division of Lot 24? Is everything okay with it as far as private drive width and what should the depth of the private drive be?

I'm sorry to be bothering you about this issue, but it is going to the Planning Board on Tuesday and I am in the middle of writing a report and I need to know if there should be any conditions regarding fire.

Thanks.  
Kandi

Sample Warranty Deed  
(Maine Statutory Short Form)

THAT, Amy K. Mulkerin and Gregory T. McCormack for consideration paid, grant to \_\_\_\_\_ of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_, with Warranty Covenants, the land in Portland, County of Cumberland, State of Maine, described as follows:

A certain lot or parcel of land with any improvements thereon, more specifically known as lot 24A The Pines as shown on subdivision plan prepared by Pinkham and Greer dated May 4, 2000 and recorded in Cumberland County Registry of Deeds Plan Book \_\_\_\_\_; Page \_\_\_\_\_.

Being a portion of the premises conveyed to the Grantors herein by deed of the City of Portland dated April 28, 1998 and recorded in the Cumberland County Registry of Deeds in Book 13774, Page 12.

Said parcel is being conveyed subject to 200' x 220' perpetual pedestrian easement on the southerly portion of lot 24A depicted as a shaded area shown on subdivision plan prepared by Pinkham and Greer dated May 4, 2000 and recorded in Cumberland County Registry of Deeds; Plan Book \_\_\_\_\_; Page \_\_\_\_\_.

Said easement is intended to provide access, on foot, only from the existing common open space for owners of lots 1-23 of the Pine Subdivision Plan as recorded in CCRD Plan Book 200, Page 19, to the pond as depicted on Subdivision Plan for lots 12, 24A, 24B recorded in CCRD Plan Book \_\_\_\_\_; Page \_\_\_\_\_.

IN WITNESS WHEREOF, I have hereunto set my hand this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Amy K. Mulkerin

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Gregory T. McCormack

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, personally appeared before me the above-named Amy K. Mulkerin and Gregory T. McCormack, and acknowledge the foregoing to be their free act and deed.

\_\_\_\_\_  
Notary Public/Attorney at Law

My Commission Expires: \_\_\_\_\_

DECLARATION OF EASEMENT AND MAINTENANCE  
OF PRIVATE DRIVE KNOWN AS \_\_\_\_\_

This Declaration is made as of the \_\_\_\_\_ day of \_\_\_\_\_, 2000 by Pines of Portland, Inc. whose mailing address is 426 Forest Ave., Portland (herein after called the "Declarants");

Witnesseth:

Whereas, the Declarants are owners of certain real property situated in Portland, County of Cumberland, State of Maine, more particularly being lot 24A and lot 24B as shown on Plan of lot 12, 24A, 24B The Pines prepared by Pinkham and Greer dated May 4, 2000 and recorded in CCRD Plan Bk \_\_\_\_\_; Page \_\_\_\_\_;

Whereas, the Declarants are desirous of outlining and declaring the respective duties and obligations of the owners of lots 24A and 24B with regard to the use, maintenance, repair, and plowing of the 50' wide shared driveway;

Now, therefore, the Declarants hereby declare that the respective lots numbered 24A and 24B on said Plan shall be held, transferred, sold, or conveyed subject to the following covenants, agreements, liens, and charges relating to the use, maintenance, repair and plowing of the 50' shared driveway and utility easement as shown on said Plan.

1. The owner or owners of lot 24A as shown on said Plan shall jointly and severally be responsible for one half of the necessary cost of maintaining, repairing, and plowing the 390' shared driveway shown on said Plan;
2. The owner or owners of lot 24B as shown on said Plan shall jointly and severally be responsible for one half of the necessary cost of maintaining, repairing, and plowing the 390' shared drive;
3. Owners of lot 24A and 24B shall each share a common perpetual easement for both vehicular and pedestrian access purposes over, under, and across the entire 50' shared driveway as shown on said Plan and shall each have the right to establish, use, construct, and maintain underground utilities including water and sewer lines, CATV, and phone lines within this easement;
4. The duties and obligations imposed by this Declaration shall run with the land;

Dated this \_\_\_\_\_, 2000

\_\_\_\_\_

\_\_\_\_\_

State of Maine  
County of Cumberland, ss.

\_\_\_\_\_  
Date

Personally appeared the above named Gregory T. McCormack, President of The Pines of Portland, Inc. and acknowledged the foregoing instrument to be his free act and deed.

Before me,

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My commission expires.

May 4, 2000

To: Kandi Talbot  
City of Portland Planner

From: Pines of Portland, Inc.

Re: Division of Lot 24 Pines at Kansas Submission

Dear Kandi:

Please find enclosed plans and submissions for our proposed amendment to the approved Pines at Kansas Avenue plan.

After careful consideration of all the issues surrounding our previous plans such as neighborhood density concerns, drainage, wetlands etc., we feel a very low density project will result in the least impact to the area as a whole.

We are proposing a shared private driveway to access (2) – (3) acre single family homesites; in addition, we are proposing to add about 1.5 acres to Lot 12 resulting in about a (4) acre lot.

Upon review of codes, we feel the proposed submission meets the information required by City Ordinances.

Please note that we have met with Lt. McDougal of the fire department; he seemed to be pleased that we would be adding a fire hydrant at the end of Kansas Avenue.

If you have further questions, please call.

Sincerely,



Gregory T. McCormack / Amy K. Mulkerin  
Pines of Portland, Inc.

May 4, 2000

To: Mr. Frank Brancely  
Portland Public Works

From: Gregory T. McCormack  
Pines of Portland, Inc.

Re: Sewer Capacity Letter  
Lot 24, Pines at Kansas

Lot 24 is to be divided into two single family residential lots.

The particulars are as follows:

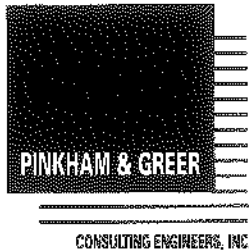
1. Planner: Kandi Talbot
2. CBL: 404-C-21 (Street Address as yet to be assigned)
3. Proposed flow: (2) 4 bedroom homes @ 360 gallons/day =  
720 gallons/day

Could you please provide a sewer capacity letter for the above proposed homes. Thank you.

Sincerely,



Gregory T. McCormack



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

April 27, 2000  
File: 98113

Mr. Greg McCormack  
MULKERIN ASSOCIATES  
426 Forest Ave.  
Portland, ME 04101

RE: DRAINAGE FOR LOTS 24 AND 25

Dear Greg:

This letter is to confirm that the addition of Lot 25 to this project does not change the drainage analysis previously approved by the Board. As noted in my July 22, 1999 letter to Kandi Talbot Item 7 on Page 2, I assumed that the entire Pines property would be developed as ¼ acre lots which for the 6 acres of Lot 24 would be equivalent to 24 homes. By creating 2 lots and setting the rest of the parcel aside is less of an impact.

I am confident that the construction of the two homes will have no impact on the drainage analysis. Please let me know if you have any questions

Sincerely,

PINKHAM & GREER

Thomas S. Greer, P.E.

The signature is a cursive, handwritten name in black ink. Below the signature, the name "Thomas S. Greer, P.E." is printed in a standard, sans-serif font.

TSG/lh

Enclosure: Letter of July 22, 1999



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

July 23, 1999  
File: 98102  
99160

Ms. Kandi Talbot, Planner  
CITY OF PORTLAND  
389 Congress Street  
Portland, ME 04101

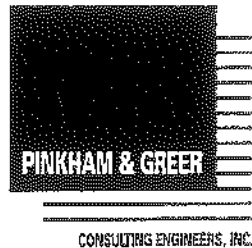
RE: RESPONSE TO 7/20/99 MEMO, J. WENDEL  
THE PINES BY A & G ASSOCIATES

Dear Kandi:

Below are responses to the items that Jim Wendel noted in his 7/20 memo.

1. The area above Lots 10-12 and 16-18 generally drains from Falmouth through these lots. On the north end between Lots 10 and 12 there is a concentrated flow that will be accommodated by shaping and grading the turn-a-round. The remaining will be drained along the edges of the lots to the cross street as in common with other City projects. These will be defined as part of the minor site plan review of each home as is the City's standard practice, see note on the subdivision plan.
2. Survey, Inc. is preparing recordable subdivision plans for each project. These are transmitted to you under a separate cover. The remaining lots that are owned by A & G do not include the paper streets. We do not need to go through the vacating process at this time.
3. The land along the Falmouth line is shown as future development area. We have no specific plans at this time as to a development configuration.
4. The topography has been added to the subdivision plans. As with Item 1, each lot will have a minor site plan review for grading and drainage.
5. As with Item 2 above, the City owns the rights-of-way, so reducing them in size would require vacating the streets. We do not need to go through that process at this time. We have not selected a street name for the cross street at this time but will submit it to the City for approval shortly.





CITY OF PORTLAND

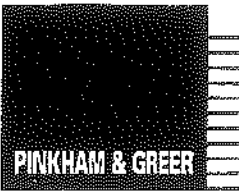
July 22, 1999

Page 2

6. The wetlands have been delineated on the Master Plan. There may be some small upland islands around the pond but at this time are considered too small to delineate separately. A report was completed and submitted with the permit application for the project. We recognize the need to have any permits in place for wetland impacts and will continue to file permits with the DEP as necessary.
7. The curve numbers were based on a board overview of the soils and the existing land use. The County Soils were listed for each catchment area with the hydrologic soils group, see hand written sheet submitted with the drainage calculations. The majority of this section of Portland is developed with  $\frac{1}{4}$  acre lots so the curve numbers 61 for A soils to 87 for D soils was referenced. Much of the area has C/D soils so CN 85 was selected. For Catchment 40, in Falmouth, the area is less developed so a lower CN was selected.

In general, I have tried to accurately select CN that make sense and with  $T_c$  paths that generate flows that appear correct. As with all drainage analysis the change in curve numbers is more important than the number itself. The project areas, Catchments 26 and 36 change from 78 in the existing conditions to 85 in the proposed condition. This, in my opinion, was a conservative approach to account for the current development and include future development as well. It is unlikely the entire A & G holdings will be  $\frac{1}{4}$  acre house lots, much of the area will remain undeveloped.

8. The length of 10 and 103 were kept short by design. During heavy flows, ponding occurs back towards these reaches effectively reducing their length. I believe this approach reduces the travel time in the analysis and better predicts actual conditions. We have revised the catchment areas and shown 101 on the new drawing. It is 300' from the culvert to the closed contour on the drawing. This area would be the beginning of Pond 3.
9. Reach 107 and 105 are placed one after the other to account for the change in slope. 107 uses a 5% gradient from Ledgewood to the stream, Reach 105. Based on my field observation, Reach 105 is very flat so a 0.5% slope was used. There is a short section where 104 and 105 are combined and could be added together. This approach does not change the flow reaching the pond.



CONSULTING ENGINEERS, INC.  
10. 11. 12.

CITY OF PORTLAND  
July 22, 1999  
Page 3

The aerial topography Jim provided was helpful in revising my calculations. Attached is a revised plan for catchments 20 to 24 for your review. I have revised the paths as well.

13. I realized Catchment 5 was under development as Jameson Place while doing the analysis. I selected a curve number of 83, which would represent the area as developed. My goal in preparing this analysis was to reflect the developed conditions as best as practicable. Please note the new development does have a detention basin to control flows that affect this project.

14. The boundary plan is being provided to you under a separate cover.

Hopefully this addressed your concerns.

Sincerely,

PINKHAM & GREER

A handwritten signature in black ink, appearing to read "Thomas S. Greer", is written over the typed name. The signature is fluid and cursive in style.

Thomas S. Greer, P.E.

TSG/ik

Enclosure

Copy: Amy Mulkerin, Greg McCormack, A&G Associates



# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

July 14, 1999

Mr. Gregory T. McCormack  
A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Re: The Pines at Kansas Avenue, Portland

Dear Greg:

The Portland Water District has an 8" water main in Kansas Avenue, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 66 psi; residual pressure 44 psi; with a flow of 1113 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

*David W Coffin*  
David W. Coffin, PLS  
Engineering Supervisor

0002751

BKT5276PG236



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY PROGRAMMATIC GENERAL PERMIT  
STATE OF MAINE, SUMMARY OF SCREENING AND STATUS

A&G ASSOCIATES  
C/O PINKHAM & GREER  
170 US ROUTE ONE  
FALMOUTH, MAINE 04105

CORPS PERMIT # 199902985  
CORPS PGP ID# 99-627  
STATE ID# 99-869

DESCRIPTION OF WORK AS ON ATTACHED STATE APPN:

Place fill in freshwater wetlands off Penn and Kansas Avenues at Portland, Maine in conjunction with the development of a residential subdivision. Up to 0.3 acres of wetland will be impacted by the project. Another 0.26 acres of impact was previously authorized on site for a cumulative total of 0.56 acres. The property's remaining undeveloped wetland will remain undeveloped and be preserved in perpetuity as open space to address state and local requirements.

UTM GRID COORDINATES N: 4839400 E: 397400 USGS QUAD: PORTLAND WEST, ME

I. STATE ACTIONS: PENDING [ ], ISSUED [ X ], DENIED [ ] DATE 12/14/99

LEVEL OF STATE REVIEW: PERMIT BY RULE: TIER 1: TIER 2: X TIER 3: (NRPA)

II. FEDERAL ACTIONS:

DATE STATE FILE REVIEWED: 11/18/99 (PGP JP MEETING)

LEVEL OF CORPS REVIEW: CATEGORY 1: CATEGORY 2: X

AUTHORITY: SEC 10, 404 X 10/404, 103

EXCLUSIONS: The exclusionary criteria identified in the general permit do/do not apply to this project. (circle one)

ESSENTIAL FISH HABITAT (EFH): EFH PRESENT Y (N) (CIRCLE ONE)

IF YES: Based on the terms and conditions of the PGP, which are intended to ensure that authorized projects cause no more than minimal environmental impacts, the Corps of Engineers has preliminary determined that this project will not cause more than minimal adverse effects to EFH identified under the Magnuson-Stevens Fisheries Conservation and Management Act.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO, USF&WS NO, NMFS NO

CORPS DETERMINATION:

We have determined that your project as proposed and as shown on the plans submitted to the Corps is eligible under the State of Maine Programmatic General Permit. Accordingly, other than possibly performing a compliance inspection (condition 22 of the permit) at some later date, we do not plan to take any further action on this project.

Please note that all work is subject to the conditions contained in the general permit and any additional special conditions listed on any attached sheets. No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained.

ADDITIONAL SPECIAL CONDITIONS ATTACHED: YES (X) NO (CIRCLE ONE)

If you have any questions on this matter, please contact Shawn Mahaney or Rod Howe of my staff at 207-623-8367 at our Manchester, Maine project Office.

Jay L. Clement  
JAY L. CLEMENT  
SENIOR PROJECT MANAGER  
MAINE PROJECT OFFICE

David H. Killoy  
DAVID H. KILLOY, P.E., C.P.G. DATE 12/29/99  
CHIEF, PERMITS & ENFORCEMENT SECTION  
REGULATORY BRANCH

ADDITIONAL SPECIAL CONDITIONS FOR  
DEPARTMENT OF THE ARMY  
PROGRAMMATIC GENERAL PERMIT  
NO. 199902985

No additional filling of waters of the United States (wetlands or waterways) for lot development is authorized without written approval from the Corps. The permittee shall record this permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The permittee shall provide the Corps with a copy of the recording.

RECEIVED  
RECORDED REGISTRY OF DEEDS  
2000 JAN 13 AM 11: 37  
CUMBERLAND COUNTY  
*John B O'Brien*



STATE OF MAINE  
17 State House Station  
Augusta, ME 04333

**Tier 1 / Tier 2 Decision**

Applicant Name & Address: A&G Associates  
426 Forest Avenue  
Portland ME 04101

DEP Project Number: 99-869-S  
CORPS Permit Number: 199902985  
Project Location: end of Kansas Avenue, Portland

Description of Work: Fill approximately 4,364 square feet of freshwater wetland for the construction of a residential driveway leading into lot #24 and the end of a hammerhead turn-around. This project is associated with a stream crossing and also applies to soil disturbance adjacent to the freshwater wetland. Previously permitted wetland impacts under DEP #98-666-S total 2,756 square feet. Cumulative wetland impacts for this project total 7,120 square feet.

Permit for:	<input checked="" type="checkbox"/> Tier 1	<input type="checkbox"/> Tier 2
Date of Joint Review:		
DEP Decision:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied (see attached letter)
CORPS Action:	<input type="checkbox"/> Approved ↗	<input checked="" type="checkbox"/> Review Pending, contact the Maine Project Office
	<input type="checkbox"/> enclosed	
	<input type="checkbox"/> pending (see below)	

Approval Pending: The Corps, Maine Project office, is in the process of reviewing the project. The final decision will be forthcoming directly from their regional office headquarters.

Special Conditions: No fill for lot development.

Standard Conditions:

- Approval from both the DEP and the Army Corps of Engineers is required in order to proceed with your project. This permit is good for two (2) years from the date signed and is transferable only with prior approval from the Department.
- The project must be completed according to the plans in the application. Any change in the project plans must be reviewed and approved by the Department.
- Properly installed erosion control measures must be installed prior to beginning the project, and all disturbed soil should be stabilized immediately upon project completion.
- A copy of this approval will be sent to the City of PORTLAND. Department approval of your activity does not supersede or substitute the need for any necessary local approvals.

This decision satisfies the Water Quality Certification requirement.

Please note the attached sheet for guidance on appeal procedures. If you have any questions regarding this, please contact Dawn Hallowell at 207-822-6300.

  
MARTHA G. KIRKPATRICK, COMMISSIONER

12/14/99  
DATE

cc: file  
City of Portland  
Tom Greer, Pinkham & Greer



DeLUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

778 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

April 20, 2000

Mr. Greg McCormack  
Mulkerin Associates Real Estate  
426 Forest Avenue  
Portland, Maine 04101

**Re: #88 Kansas Avenue (Lot 22) – Revised Grading Plan**

Dear Greg:

This letter is in response to the revised grading plan that you had sent to Steve Bushey of our office. A copy of that revised grading plan is attached. The minor fill changes appear to make sense, and the culvert being added at the driveway will keep the water from being forced onto the roadway. Our office would like to see a minimum of one foot of cover over the culvert. The 15-foot drainage easement in front of lot 22 and lot 21 must be recorded at the registry. The drainage easement shall be granted to lots 23, 22 and 21 prior to a certificate of occupancy being issued for lot 22 or lot 21.

If you have any questions, please do not hesitate to call.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Gordon Smith  
Director of Construction Services

GLS/sq/JN1350.10/McCormack4-20

Attachment

c: Marge Schmuckal  
Kandi Talbot  
Code Enforcement

0002751

BK 15276 PG 236



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY PROGRAMMATIC GENERAL PERMIT  
STATE OF MAINE, SUMMARY OF SCREENING AND STATUS

A&G ASSOCIATES  
C/O PINKHAM & GREER  
170 US ROUTE ONE  
FALMOUTH, MAINE 04105

CORPS PERMIT # 199902985  
CORPS PGP ID# 99-627  
STATE ID# 99-869

DESCRIPTION OF WORK AS ON ATTACHED STATE APPN:

Place fill in freshwater wetlands off Penn and Kansas Avenues at Portland, Maine in conjunction with the development of a residential subdivision. Up to 0.3 acres of wetland will be impacted by the project. Another 0.26 acres of impact was previously authorized on site for a cumulative total of 0.56 acres. The property's remaining undeveloped wetland will remain undeveloped and be preserved in perpetuity as open space to address state and local requirements.

UTM GRID COORDINATES N: 4839400 E: 397400 USGS QUAD: PORTLAND WEST, ME

I. STATE ACTIONS: PENDING [ ], ISSUED [ X ], DENIED [ ] DATE 12/14/99

LEVEL OF STATE REVIEW: PERMIT BY RULE: TIER 1: TIER 2: X TIER 3: (NRPA)

II. FEDERAL ACTIONS:

DATE STATE FILE REVIEWED: 11/18/99 (PGP JP MEETING)

LEVEL OF CORPS REVIEW: CATEGORY 1: CATEGORY 2: X

AUTHORITY: SEC 10 404 X 10/404 103

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project. (circle one)

ESSENTIAL FISH HABITAT (EFH): EFH PRESENT Y N (CIRCLE ONE)

IF YES: Based on the terms and conditions of the PGP, which are intended to ensure that authorized projects cause no more than minimal environmental impacts, the Corps of Engineers has preliminary determined that this project will not cause more than minimal adverse effects to EFH identified under the Magnuson-Stevens Fisheries Conservation and Management Act.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO USF&WS NO NMFS NO

CORPS DETERMINATION:

We have determined that your project as proposed and as shown on the plans submitted to the Corps is eligible under the State of Maine Programmatic General Permit. Accordingly, other than possibly performing a compliance inspection (condition 22 of the permit) at some later date, we do not plan to take any further action on this project.

Please note that all work is subject to the conditions contained in the general permit and any additional special conditions listed on any attached sheets. No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained.

ADDITIONAL SPECIAL CONDITIONS ATTACHED: YES NO (CIRCLE ONE)

If you have any questions on this matter, please contact Shawn Mahaney or Rod Howe of my staff at 207-623-8367 at our Manchester, Maine project Office.

Jay L. Clement  
JAY L. CLEMENT  
SENIOR PROJECT MANAGER  
MAINE PROJECT OFFICE

David H. Killooy  
DAVID H. KILLOY, P.E., C.P.G.  
CHIEF, PERMITS & ENFORCEMENT SECTION  
REGULATORY BRANCH  
DATE 12/29/99



ADDITIONAL SPECIAL CONDITIONS FOR  
DEPARTMENT OF THE ARMY  
PROGRAMMATIC GENERAL PERMIT  
NO. 199902985

No additional filling of waters of the United States (wetlands or waterways) for lot development is authorized without written approval from the Corps. The permittee shall record this permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The permittee shall provide the Corps with a copy of the recording.

RECEIVED  
RECORDED REGISTRY OF DEEDS

2000 JAN 13 AM 11:37

CUMBERLAND COUNTY

*John B O'Brien*



STATE OF MAINE  
17 State House Station  
Augusta, ME 04333

**Tier 1 / Tier 2 Decision**

Applicant Name & Address: A&G Associates  
426 Forest Avenue  
Portland ME 04101

DEP Project Number: 99-869-S  
CORPS Permit Number: 199902985  
Project Location: end of Kansas Avenue, Portland

Description of Work: Fill approximately 4,364 square feet of freshwater wetland for the construction of a residential driveway leading into lot #24 and the end of a hammerhead turn-around. This project is associated with a stream crossing and also applies to soil disturbance adjacent to the freshwater wetland. Previously permitted wetland impacts under DEP #98-666-S total 2,756 square feet. Cumulative wetland impacts for this project total 7,120 square feet.

Permit for:	<input checked="" type="checkbox"/> Tier 1	<input type="checkbox"/> Tier 2
Date of Joint Review:		
DEP Decision:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied (see attached letter)
CORPS Action:	<input type="checkbox"/> Approved $\Rightarrow$	<input checked="" type="checkbox"/> Review Pending, contact the Maine Project Office
	<input type="checkbox"/> enclosed	
	<input type="checkbox"/> pending (see below)	

Approval Pending: The Corps, Maine Project office, is in the process of reviewing the project. The final decision will be forthcoming directly from their regional office headquarters.

Special Conditions: No fill for lot development.

Standard Conditions:

- Approval from both the DEP and the Army Corps of Engineers is required in order to proceed with your project. This permit is good for two (2) years from the date signed and is transferable only with prior approval from the Department.
- The project must be completed according to the plans in the application. Any change in the project plans must be reviewed and approved by the Department.
- Properly installed erosion control measures must be installed prior to beginning the project, and all disturbed soil should be stabilized immediately upon project completion.
- A copy of this approval will be sent to the City of PORTLAND. Department approval of your activity does not supersede or substitute the need for any necessary local approvals.

This decision satisfies the Water Quality Certification requirement.

Please note the attached sheet for guidance on appeal procedures. If you have any questions regarding this, please contact Dawn Hallowell at 207-822-6300.

  
MARTHA G. KIRKPATRICK, COMMISSIONER

12/14/99  
DATE

cc: file  
City of Portland  
Tom Greer, Pinkham & Greer



W L E  
**Portland  
Water District**

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

July 14, 1999

Mr. Gregory T. McCormack  
A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Re: The Pines at Kansas Avenue, Portland

Dear Greg:

The Portland Water District has an 8" water main in Kansas Avenue, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 66 psi; residual pressure 44 psi; with a flow of 1113 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS  
Engineering Supervisor

**PINES OF PORTLAND, INC.**  
426 FOREST AVENUE  
PORTLAND, ME 04101

MAINE BANK & TRUST

0910

52-150/112

11/22/00

PAY  
TO THE  
ORDER OF      City of Portland

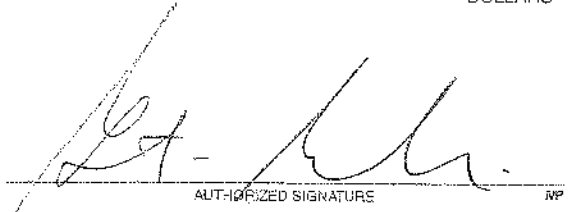
\$ \*\*410.00

Four Hundred Ten and 00/100\*\*\*\*\*

DOLLARS

City of Portland

MEMO      Bill for engineering review

  
\_\_\_\_\_  
AUTHORIZED SIGNATURE      MP

Security features. Details on back.

⑈000910⑈ ⑆011201500⑆ 0055356 5⑈

# City of Portland Planning Department

389 Congress Street, 4th Floor  
Portland, ME 04101  
(207)874-8721 or (207)874-8719  
Fax: (207)756-8258

## FAX TRANSMISSION COVER SHEET

Date: November 22, 2000  
To: Greg McCormack  
Company: \_\_\_\_\_  
Fax #: 871-8695  
From: Kandi Talbot  
RE: \_\_\_\_\_

YOU SHOULD RECEIVE 2 PAGE(S),  
INCLUDING THIS COVER SHEET.  
IF YOU DO NOT RECEIVE ALL THE PAGES,  
PLEASE CALL (207)874-8721 OR (207)874-8719.

Bill for Engineering Review of Lot 24, The Pines

DRC's time:	4 hours x \$65.00 =	\$260.00
Peer Review of Wetlands:		<u>\$150.00</u>
Total		\$410.00



**CITY OF PORTLAND**

May 12, 2000

Amy Mulkerin  
Greg McCormack  
The Pines of Portland, Inc.  
426 Forest Avenue  
Portland, ME 04101

RE: The Pines, Lot 24

Dear Ms. Mulkerin & Mr. McCormack:

After review of the submitted plan for Lot #24, the following comments have been generated.

1. The plan should show clearly the building envelope for lots 24A and 24B.
2. Note 5 shall be removed from the plan.
3. A note should added to the plan stating that two street trees per single family lot will be installed.
4. A draft easement for the utilities and private drive shall be submitted to staff for review.
5. The deed for Lot 24A shall be submitted that shows the language for the easement to the pond from the common open space shall be submitted for review by staff.
6. A detail of the private drive shall be submitted.

I am currently waiting for comments from Steve Bushey. Any further comments from staff will be forwarded to you as soon as possible. If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

A handwritten signature in cursive script that reads "Kandice Talbot".

Kandice Talbot  
Planner

May 20, 2000

9 Charlotte Drive  
Falmouth, ME 04105  
(207) 797-2084

✓ Mr. Joseph E. Gray, Jr.  
Director of Planning and Urban Development  
City Hall, 4<sup>th</sup> Floor  
389 Congress Street  
Portland, ME 04101

**RE: The Pines of Portland/  
Pennsylvania Avenue Subdivision  
North Deering  
Portland, ME**

Dear Mr. Gray:

I recently received notification (copy attached) that the developers of The Pines of Portland are proposing to further subdivide lot 24 of their original develop plan. I am opposed to the applicant's proposal for the following reasons:

- ▶ I have consulted with several direct abutters to the proposed development area and have learned that these parties have not received notification of the planning board meeting tentatively scheduled for May 23, 2000. It is both a city of Portland ordinance and state of Maine statute that abutters be notified of all such proceedings. In short, until all abutters and effected parties are provided proper and adequate notice, this proposal simply can not be entertained by the Portland Planning Board.
  
- ▶ Further development of lot 24 will further exacerbate problematic stormwater runoff and drainage impacts to adjacent land owners. Currently, many households adjacent to the applicants's development area experience flooding in their basements. To no avail, this concern was expressed repeatedly during the review process of Phases II and III of the proposed subdivision. Yet an adequate stormwater management plan was never prepared or subsequently approved to address these concerns. Additional development will simply worsen this situation for those parties down gradient of the disturbed areas. In addition, portions of undeveloped land southerly of the proposed development site have experienced increases in stormwater runoff since the commencement of development of Phases II and III. This increased runoff has changed the original drainage patterns of



adjacent parcels and has negatively impacted these properties for future use. Additional development by the proponent as proposed at this juncture will simply worsen an already unacceptable situation.

- ▶ Negative impacts to wetlands are also unavoidable under the applicant's proposal. The wetland delineation on the project site as a whole simply is not accurate and disturbance of these resources has occurred in Phases II and III. Further development of lot 24 will undoubtedly further degrade the wetland resources that lie both on and adjacent to the proposed development area. During the review process of Phases II and III, this concern was expressed on numerous occasions by various individuals. Although the applicant indicated that protection of adjacent wetlands would be a priority during construction, what actually occurred appears to be somewhat to the contrary. It is with the deepest disappointment that I refer you to the attached letters by the State of Maine, Department of Environmental Protection and the U.S. Army Corps of Engineers. At this juncture, the city of Portland must take responsible action to protect these resources that are critical to the ecosystem to the region and important to the residents of the surrounding area.

I look forward to your written response. If you have any questions, feel free to call me.

Sincerely,

  
David C. Dargie, P.E.

Enclosure

cc: J. Rudd, Esq.  
Portland City Council - all members

Pines (5-20-00)



TO RESIDENTS AND PROPERTY OWNERS IN THE VICINITY OF  
KANSAS AVENUE

On Tuesday, May 23, 2000, the Portland Planning Board will consider a proposal by The Pines of Portland for an amendment to their approved 30-lot subdivision. The applicant is proposing to divide lot 24, which is approximately 8 acres in size into two 3 acre lots and add an additional 1.5 acres to Lot 12. Access to the proposed lots is from Kansas Street. The site is zoned R-3.

The public hearing is scheduled to begin at 6:00 p.m. in Room 209, City Hall, 389 Congress Street, Portland, Maine. Should you wish to review the plans in advance, they are available in the Portland Planning Department, City Hall. If you are unable to attend the public meeting of the Board, please submit your written comments to Joseph E. Gray, Jr., Director of Planning and Urban Development, City Hall, 389 Congress Street, Portland, Maine 04101 or e-mail comments to [kcote@ci.portland.me.us](mailto:kcote@ci.portland.me.us).

Alexander Jaegerman  
Chief Planner



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.  
GOVERNOR

MARTHA KIRKPATRICK  
COMMISSIONER

April 21, 2000

Greg McCormick  
Mulkerin & Associates  
426 Forest Avenue  
Portland ME 04101

RE: The Pines of Portland, DEP # 99-869-S

Dear Mr. McCormick:

This letter serves as a follow up to our telephone conversation of April 19, 2000, in response to a complaint I received about The Pines. After our conversation, I spoke with Jay Clement of the US Army Corps of Engineers regarding this project. As you are aware, Jay made a site inspection and discovered that erosion control measures had not been installed on site.

I visited the site earlier today. The contractors were on site installing silt fence around the project area. I walked the site with them and gave them directions as to where to place the silt fence, on the upland side of the flagged upland/wetland boundary. Repairs also need to be made to the erosion control measures around the stream crossing. There were no erosion control measures installed around the work being done at the end of Kansas Avenue. The contractors indicated to me that they would be installing silt fence in that area as well.

I will be visiting the site at unscheduled times throughout project construction to check the erosion control measures and compliance with the Department's standards.

If you have questions regarding this project, feel free to call me at 822-6300.

Sincerely,

Dawn E. Hallowell  
Division of Land Resource Regulation  
Bureau of Land & Water Quality

Cc: Mike Clark, DEP Field Services  
Jay Clement, US ACOE

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 764-1507



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
688 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

Regulatory Branch  
CENAE-CO-R-51

April 20, 2000

Amy Mulkerin  
Mulkerin & Associates  
426 Forest Avenue  
Portland, Maine 04101

Dear Ms. Mulkerin:

This concerns Dept. of the Army permit number 199902985, issued to A&G Associates to place fill in freshwater wetlands off Kansas and Penn Avenues at Portland, Maine in conjunction with the build out of a residential subdivision known as "The Pines".

Based on a report from the Maine DEP, I performed a site inspection yesterday afternoon. At best the installation of the erosion control measures is abysmal. Standard condition 16 of the Corps permit requires permittees to install adequate erosion control measures and to maintain them to prevent secondary impacts to aquatic resources. During my site visit I noticed that the silt fence was not dug in for the most part; it was down in many places (for no apparent reason except poor installation); it was installed too loosely to be effective; it was not properly joined at the overlap points; and it did not adequately encompass the areas already disturbed or scheduled to be disturbed.

You must take steps to immediately correct these deficiencies, particularly with the rains predicted this week. I will perform a follow up inspection before the end of the week to verify that corrective action has been taken.

Failure to comply with permit conditions and/or an unauthorized discharge into waters of the United States is subject to fines of up to \$50,000 per day of violation. No enforcement action will be taken if the deficiencies are corrected immediately.

If you have any questions, please contact me at 207-623-8367 at our Manchester, Maine Project Office.

Sincerely,

A handwritten signature in cursive script that reads "Jay L. Clement".

Jay L. Clement  
Senior Project Manager  
Maine Project Office

Copy Furnished:  
Dawn Hallowell - ME DEP



**CITY OF PORTLAND**

March 28, 2002

Greg McCormack  
Amy Mulkerin  
Pines of Portland, Inc.  
Forest Avenue  
Portland, ME 04102

RE: The Pines

Dear Greg and Amy:

This letter is in response to your concerns regarding the expiration of the approvals for Lot 24A and 24B of The Pines Subdivision.

Section 14-495(4) states that "Unless the subdivider shall record his or her approved recording plat within three (3) years after the planning board has approved the subdivision plat, the recording plat approval shall become null and void..."

Since the approved subdivision plat has been recorded, the approval does not expire unless a revised recording plat replaces the approved subdivision plat.

If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

✓ Kandice Talbot  
Planner

# CITY OF PORTLAND, MAINE

## PLANNING BOARD

---

May 30, 2000

Jaimy Caron, Chair  
Deborah Krichels, Vice Chair  
Kenneth M. Cole III  
Cyrus Y. Hagge  
Erin Rodriguez  
Mark Malone  
Orlando E. Delogu

Amy Mulkerin  
Greg McCormack  
The Pines of Portland, Inc.  
426 Forest Avenue  
Portland, ME 04101

re: Revision to The Pines Subdivision, Lot #24

Dear Ms. Mulkerin & Mr. McCormack:

On May 23, 2000 the Portland Planning Board voted 5-0 (Malone and Rodriguez absent) on the following motions regarding the revision to Lot #24 of The Pines Subdivision:

1. That the plan was in conformance with the Subdivision Review Ordinance of the City Land Use Code with the following conditions:
  - i. that the applicant revise the plans in accordance with the Public Works' memo dated 5/17/00 regarding sewer connections and provide staff with a sewer capacity letter from the Portland Sewer Division.
  - ii. that the applicant revise the plan in accordance with the Development Review Coordinator's memo dated 5/19/00 regarding culvert cross section, silt fence, sizing of riprap aprons and riprap sizes, stone check dams and spot grades.
  - iii. that the Fire Department review and approve the subdivision plan.
  - iv. that the applicant revise the plan in accordance with the Planner's memo dated 5/12/00 regarding easements for utilities, shared private drive, and access to pond, detail of the private drive and street trees.
  - v. that the wetland delineation for Lot 24A and 24B be clarified and if needed, building envelope be relocated.
  - vi. that the remaining portion of Lot 24 be unbuilt.

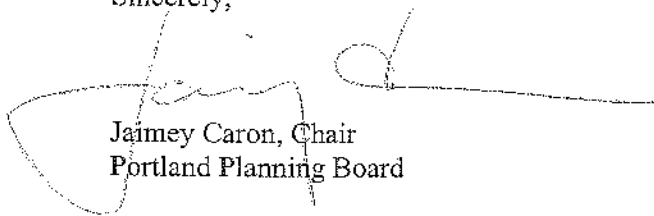
The approval is based on the submitted plan and the findings related to site plan review standards as contained in Planning Board #17-00, which is attached.

Please note the following provisions and requirements for all subdivision approvals:

1. Mylar copies of the construction drawing for the subdivision must be submitted to the Public Works Department prior to the release of the plat.
2. A performance guarantee covering the site improvements as well as an inspection fee payment of 1.7% of the guarantee amount must be submitted to and approved by the Planning Division and Public Works prior to the recording of the subdivision plat. The subdivision approval is valid for three (3) years.
3. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
4. Prior to construction, a preconstruction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the preconstruction meeting.
5. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)
6. The Development Review Coordinator (874-8721) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions regarding the Board's actions, please contact the planning staff.

Sincerely,



Jaimey Caron, Chair  
Portland Planning Board



cc: Joseph E. Gray, Jr., Director of Planning and Urban Development  
Alexander Jaegerman, Chief Planner  
✓Kandice Talbot, Planner  
P. Samuel Hoffses, Building Inspector  
Marge Schmuckal, Zoning Administrator  
Tony Lombardo, Project Engineer  
Development Review Coordinator  
William Bray, Director of Public Works  
Jeff Tarling, City Arborist  
Penny Littell, Associate Corporation Counsel  
Lt. Gaylen McDougall, Fire Prevention  
Inspection Department  
Lee Urban, Director of Economic Development  
Don Hall, Appraiser, Assessor's Office  
Susan Doughty, Assessor's Office  
Approval Letter File

**PLANNING BOARD REPORT #17-00**

**REVISION TO LOT #24  
SUBDIVISION REVIEW  
THE PINES OF PORTLAND, INC., APPLICANT**

Submitted to:

Portland Planning Board  
Portland, Maine

May 23, 2000

**I. INTRODUCTION**

The Pines of Portland, Inc. is proposing an amendment to Lot 24 of the approved 30-lot subdivision. The applicant is proposing to divide Lot 24 into two lots and add a portion of Lot 24 to Lot 12.

The subdivision is broken up into 3 areas, which are Penn Avenue, Kansas Avenue, and Wyoming Avenue. Penn Avenue consists of 19 lots bounded by Nevada Avenue, Montana Street, Maine Avenue, and the Falmouth line. Wyoming Avenue consists of 6 lots bounded by Kansas Avenue, Virginia Street and Racine Avenue. Kansas Avenue consists of 4 lots and is bounded by Illinois Avenue, Montana Street, Wyoming Avenue, and Virginia Street. Access to Lot 24 will be from Kansas Avenue.

514 notices were sent to area residents. A legal ad appeared in the May 15th and 16th editions of the Portland Press Herald.

**II. BACKGROUND**

In 1998, the applicant purchased approximately 20 acres of tax-acquired property from the City of Portland. At that time, the applicant proposed to develop approximately 15 single family lots. This 20 acres were included in a 1926 subdivision plan. The applicant also acquired additional land in this area making the subdivision a total of 34 acres. The Planning Board approved the subdivision on October 12, 1999.

**III. SUMMARY OF FINDINGS**

Zone:	R-3
Total Area of Lot 24:	8 acres
Proposed Area of Lot 24A:	3.08 acres
Proposed Area of Lot 24B:	3.50 acres
Proposed Area of Lot 12:	4.31 acres
Adjacent Uses:	Residential

**IV. STAFF REVIEW**

The proposal has been reviewed for compliance with the Subdivision Ordinance of the Land Use Code.

**V. SUBDIVISION REVIEW**

1. Water and Air Pollution

The development will not result in undue water or air pollution.

2/3. Water

The applicant is proposing to connect to the existing water line in Kansas Avenue. A capacity letter from Portland Water District is included as Attachment 3.

4. Soil Erosion

The applicant has included a sedimentation and erosion control plan with the proposed development. The Development Review Coordinator is recommending that the applicant show silt fence on Lot 12. The DRC's memo is included as Attachment 7.

5. Traffic

Access to Lots 24A and 24B will be from Kansas Avenue. During the subdivision review process, the applicant provided a snowplow turnaround. The Planning Board also approved sidewalk on one side of Kansas Avenue.

6. Sanitary/Stormwater

**Sanitary**

The applicant is proposing to utilize an existing sewer line within Kansas Avenue. The applicant has requested a sewer capacity letter from the Portland Sewer Division, but has not received it yet. Public Works has reviewed the plans and is requiring that the applicant specify on the plan that a "core drilled" connection to the interceptor sewer is the only one acceptable to Public Works. Public Works is also requesting that more information be shown on the plan such as the size of the City's sewer main, pipe material and slope of the sewer connection. The plan should also specify the slope, pipe size and length of the proposed sanitary service from Lots 24A and 24B, specify the depth to each proposed sewer connection into the City's sewer, and supply the inverts for each city manhole on either side of the proposed sewer service connection. Public Works' memo is included as Attachment 6. A potential condition of approval is:

- that the applicant revise the plans in accordance with Public Works' memo dated 5/17/00 regarding sewer connections and provide staff with a sewer capacity letter from the Portland Sewer Division.

**Stormwater**

The subdivision consists of 34 acres bounded by Wyoming Avenue, Virginia Avenue, Maine Avenue and the Falmouth line. The total watershed, which includes area west of Allen Avenue from the Lyseth School northerly across Summit Street to the Portland City line, consists of 300± acres.

The proposal for the subdivision is that the 4 ft. x 6 ft. culvert located at Penn Avenue will act as a dam and will retain the drainage within the wetland areas to the north of Penn Avenue. This wetland area will serve as a large storage area for stormwater. The detention area is defined by contour 72' elevation. Anything below that will be detention area. A note was added to the subdivision plan which states that "No filling or alteration of detention area, below 72' elevation, north of Penn Avenue."

During the original subdivision proposal, the applicant had assumed that the entire Pines subdivision would be developed as 1/4 acres lots, which would make Lot 24 equivalent to 24 homes. By creating only two lots out of this area creates less of an impact.

The Development Review Coordinator has reviewed the plans. The DRC's comments are included as Attachment 7. The DRC's comments are technical issues such as the computations for sizing of all riprap aprons and riprap sizes should be provided, stone check dams should be provided on the ditch on the uphill side of Lot 24 and spot grades should be provided at the end of Kansas Avenue. A potential condition of approval is:

- that the applicant revise the plan in accordance with the Development Review Coordinator's memo dated 5/19/00 regarding culvert cross section, silt fence, sizing of riprap aprons and riprap sizes, stone check dams and spot grades.

7. Fire

The applicant is proposing a 15 ft. private drive to the two lots. The Fire Department is currently reviewing the plan to determine if fire trucks will be able to access the two lots. The Fire Department's comments will be available at the public hearing. A potential condition of approval is:

- that the Fire Department review and approve the subdivision plan.

8. Other Issues

The applicant is proposing a shared private driveway for Lots 24A and 24B. This results in a 50 ft. wide shared driveway and utility easement. Staff has requested that the applicant submit a draft easement for review.

The applicant is also proposing that a portion of Lot 24A will have an easement area to allow access to the pond from the existing common open space area. Staff is requesting that the deed for Lot 24A be submitted that shows the language for the easement to the pond from the common open space for review. A letter to the applicant from staff is included as Attachment 8. A potential condition of approval is:

- that the applicant revise the plan in accordance with the Planner's memo dated 5/1/00 regarding easements for utilities, shared private drive, and access to pond, detail of the private drive, and street trees.

## VI. MOTIONS FOR THE BOARD TO CONSIDER

On the basis of plans and materials submitted by the applicant and on the basis of information contained in Planning Report #17-00 relevant to standards of Subdivision Review, the Planning Board finds that the proposed development is/is not in conformance with the Subdivision Ordinance of the Land Use Code.

### Potential Conditions of Approval:

- i. that the applicant revise the plans in accordance with Public Works' memo dated 5/17/00 regarding sewer connections and provide staff with a sewer capacity letter from the Portland Sewer Division.
- ii. that the applicant revise the plan in accordance with the Development Review Coordinator's memo dated 5/19/00 regarding culvert cross section, silt fence, sizing of riprap aprons and riprap sizes, stone check dams and spot grades.
- iii. that the Fire Department review and approve the subdivision plan.
- iv. that the applicant revise the plan in accordance with the Planner's memo dated 5/12/00 regarding easements for utilities, shared private drive, and access to pond, detail of the private drive, and street trees.

### Attachments:

1. Letter from Applicant dated 5/4/00
2. Applicant's Request for Sewer Capacity Letter
3. Portland Water District Letter
4. Drainage Information
5. Army Corp Permits
6. Public Works Memo
7. DRC'S Memo
8. Planner's Letter
9. Proposed Plan
10. Overall Pines Subdivision Plan

AH. 1

May 4, 2000

To: Kandi Talbot  
City of Portland Planner

From: Pines of Portland, Inc.

Re: Division of Lot 24 Pines at Kansas Submission

Dear Kandi:

Please find enclosed plans and submissions for our proposed amendment to the approved Pines at Kansas Avenue plan.

After careful consideration of all the issues surrounding our previous plans such as neighborhood density concerns, drainage, wetlands etc., we feel a very low density project will result in the least impact to the area as a whole.

We are proposing a shared private driveway to access (2) – (3) acre single family homesites; in addition, we are proposing to add about 1.5 acres to Lot 12 resulting in about a (4) acre lot.

Upon review of codes, we feel the proposed submission meets the information required by City Ordinances.

Please note that we have met with Lt. McDougal of the fire department; he seemed to be pleased that we would be adding a fire hydrant at the end of Kansas Avenue.

If you have further questions, please call.

Sincerely,



Gregory T. McCormack / Amy K. Mulkerin  
Pines of Portland, Inc.

AH. 2

May 4, 2000

To: Mr. Frank Brancely  
Portland Public Works

From: Gregory T. McCormack  
Pines of Portland, Inc.

Re: Sewer Capacity Letter  
Lot 24, Pines at Kansas

Lot 24 is to be divided into two single family residential lots.

The particulars are as follows:

1. Planner: Kandi Talbot
2. CBL: 404-C-21 (Street Address as yet to be assigned)
3. Proposed flow: (2) 4 bedroom homes @ 360 gallons/day =  
720 gallons/day

Could you please provide a sewer capacity letter for the above proposed homes. Thank you.

Sincerely,



Gregory T. McCormack





# Portland Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

Att. 3

(207) 774-5961  
FAX (207) 761-8307  
www.pwd.org

July 14, 1999

Mr. Gregory T. McCormack  
A & G Associates  
426 Forest Avenue  
Portland, Maine 04101

Re: The Pines at Kansas Avenue, Portland

Dear Greg:

The Portland Water District has an 8" water main in Kansas Avenue, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 66 psi; residual pressure 44 psi; with a flow of 1113 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS  
Engineering Supervisor



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

AH. 4

April 27, 2000  
File: 98113

Mr. Greg McCormack  
MULKERIN ASSOCIATES  
426 Forest Ave.  
Portland, ME 04101

RE: DRAINAGE FOR LOTS 24 AND 25

Dear Greg:

This letter is to confirm that the addition of Lot 25 to this project does not change the drainage analysis previously approved by the Board. As noted in my July 22, 1999 letter to Kandi Talbot Item 7 on Page 2, I assumed that the entire Pines property would be developed as ¼ acre lots which for the 6 acres of Lot 24 would be equivalent to 24 homes. By creating 2 lots and setting the rest of the parcel aside is less of an impact.

I am confident that the construction of the two homes will have no impact on the drainage analysis. Please let me know if you have any questions

Sincerely,

PINKHAM & GREER

Thomas S. Greer, P.E.

The signature is a cursive, handwritten name in black ink. Below the signature, the name 'Thomas S. Greer, P.E.' is printed in a standard font.

TSG/lh

Enclosure: Letter of July 22, 1999



170 U.S. Route One  
Falmouth, Maine 04105  
Tel: 207.781.5242  
Fax: 207.781.4245

4a

July 23, 1999  
File: 99102  
99160

Ms. Kandi Talbot, Planner  
CITY OF PORTLAND  
389 Congress Street  
Portland, ME 04101

RE: RESPONSE TO 7/20/99 MEMO, J. WENDEL  
THE PINES BY A & G ASSOCIATES

Dear Kandi:

Below are responses to the items that Jim Wendel noted in his 7/20 memo.

1. The area above Lots 10-12 and 16-18 generally drains from Falmouth through these lots. On the north end between Lots 10 and 12 there is a concentrated flow that will be accommodated by shaping and grading the turn-a-round. The remaining will be drained along the edges of the lots to the cross street as in common with other City projects. These will be defined as part of the minor site plan review of each home as is the City's standard practice, see note on the subdivision plan.
2. Survey, Inc. is preparing recordable subdivision plans for each project. These are transmitted to you under a separate cover. The remaining lots that are owned by A & G do not include the paper streets. We do not need to go through the vacating process at this time.
3. The land along the Falmouth line is shown as future development area. We have no specific plans at this time as to a development configuration.
4. The topography has been added to the subdivision plans. As with Item 1, each lot will have a minor site plan review for grading and drainage.
5. As with Item 2 above, the City owns the rights-of-way, so reducing them in size would require vacating the streets. We do not need to go through that process at this time. We have not selected a street name for the cross street at this time but will submit it to the City for approval shortly.

6. The wetlands have been delineated on the Master Plan. There may be some small upland islands around the pond but at this time are considered too small to delineate separately. A report was completed and submitted with the permit application for the project. We recognize the need to have any permits in place for wetland impacts and will continue to file permits with the DEP as necessary.
7. The curve numbers were based on a board overview of the soils and the existing land use. The County Soils were listed for each catchment area with the hydrologic soils group, see hand written sheet submitted with the drainage calculations. The majority of this section of Portland is developed with  $\frac{1}{4}$  acre lots so the curve numbers 61 for A soils to 87 for D soils was referenced. Much of the area has C/D soils so CN 85 was selected. For Catchment 40, in Falmouth, the area is less developed so a lower CN was selected.

In general, I have tried to accurately select CN that make sense and with  $T_c$  paths that generate flows that appear correct. As with all drainage analysis the change in curve numbers is more important than the number itself. The project areas, Catchments 26 and 36 change from 78 in the existing conditions to 85 in the proposed condition. This, in my opinion, was a conservative approach to account for the current development and include future development as well. It is unlikely the entire A & G holdings will be  $\frac{1}{4}$  acre house lots, much of the area will remain undeveloped.

8. The length of 10 and 103 were kept short by design. During heavy flows, ponding occurs back towards these reaches effectively reducing their length. I believe this approach reduces the travel time in the analysis and better predicts actual conditions. We have revised the catchment areas and shown 101 on the new drawing. It is 300' from the culvert to the closed contour on the drawing. This area would be the beginning of Pond 3.
9. Reach 107 and 105 are placed one after the other to account for the change in slope. 107 uses a 5% gradient from Ledgewood to the stream, Reach 105. Based on my field observation, Reach 105 is very flat so a 0.5% slope was used. There is a short section where 104 and 105 are combined and could be added together. This approach does not change the flow reaching the pond.

4c

The aerial topography Jim provided was helpful in revising my calculations. Attached is a revised plan for catchments 20 to 24 for your review. I have revised the paths as well.


13. I realized Catchment 5 was under development as Jameson Place while doing the analysis. I selected a curve number of 83, which would represent the area as developed. My goal in preparing this analysis was to reflect the developed conditions as best as practicable. Please note the new development does have a detention basin to control flows that affect this project.

14. The boundary plan is being provided to you under a separate cover.

Hopefully this addressed your concerns.

Sincerely,

PINKHAM & GREER



Thomas S. Greer, P.E.

TSG/lk

Enclosure

Copy: Amy Mulkerin, Greg McCormack, A&G Associates

0002751

BK15276PG236

AH. 5



DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY PROGRAMMATIC GENERAL PERMIT  
STATE OF MAINE, SUMMARY OF SCREENING AND STATUS

A&G ASSOCIATES  
C/O PINKHAM & GREER  
170 US ROUTE ONE  
FALMOUTH, MAINE 04105

CORPS PERMIT # 199902985  
CORPS PGP ID# 99-627  
STATE ID# 99-869

DESCRIPTION OF WORK AS ON ATTACHED STATE APPN:

Place fill in freshwater wetlands off Penn and Kansas Avenues at Portland, Maine in conjunction with the development of a residential subdivision. Up to 0.3 acres of wetland will be impacted by the project. Another 0.26 acres of impact was previously authorized on site for a cumulative total of 0.56 acres. The property's remaining undeveloped wetland will remain undeveloped and be preserved in perpetuity as open space to address state and local requirements.

UTM GRID COORDINATES N: 4839400 E: 397400 USGS QUAD: PORTLAND WEST, ME

I. STATE ACTIONS: PENDING [ ], ISSUED [ X ], DENIED [ ] DATE 12/14/99

LEVEL OF STATE REVIEW: PERMIT BY RULE: TIER 1: TIER 2: X TIER 3: (NRPA)

II. FEDERAL ACTIONS:

DATE STATE FILE REVIEWED: 11/18/99 (PGP JP MEETING)

LEVEL OF CORPS REVIEW: CATEGORY 1: CATEGORY 2: X

AUTHORITY: SEC 10, 404 X 10/404, 103

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project. (circle one)

ESSENTIAL FISH HABITAT (EFH): EFH PRESENT Y (N) (CIRCLE ONE)

IF YES: Based on the terms and conditions of the PGP, which are intended to ensure that authorized projects cause no more than minimal environmental impacts, the Corps of Engineers has preliminary determined that this project will not cause more than minimal adverse effects to EFH identified under the Magnuson-Stevens Fisheries Conservation and Management Act.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO, USF&WS NO, NMFS NO

CORPS DETERMINATION:

We have determined that your project as proposed and as shown on the plans submitted to the Corps is eligible under the State of Maine Programmatic General Permit. Accordingly, other than possibly performing a compliance inspection (condition 22 of the permit) at some later date, we do not plan to take any further action on this project.

Please note that all work is subject to the conditions contained in the general permit and any additional special conditions listed on any attached sheets. No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained.

ADDITIONAL SPECIAL CONDITIONS ATTACHED: YES NO (CIRCLE ONE)

If you have any questions on this matter, please contact Shawn Mahaney or Rod Howe of my staff at 207-623-8367 at our Manchester, Maine project Office.

Jay L. Clement  
JAY L. CLEMENT  
SENIOR PROJECT MANAGER  
MAINE PROJECT OFFICE

David H. Killoy  
DAVID H. KILLOY, P.E., C.P.G.  
CHIEF, PERMITS & ENFORCEMENT SECTION  
REGULATORY BRANCH  
DATE 12/29/99

5a

**ADDITIONAL SPECIAL CONDITIONS FOR  
DEPARTMENT OF THE ARMY  
PROGRAMMATIC GENERAL PERMIT  
NO. 199902985**

No additional filling of waters of the United States (wetlands or waterways) for lot development is authorized without written approval from the Corps. The permittee shall record this permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. The permittee shall provide the Corps with a copy of the recording.

**RECEIVED**  
**RECORDED REGISTRY OF DEEDS**  
**2000 JAN 13 AM 11: 37**  
**CUMBERLAND COUNTY**  
*John B. O'Brien*



STATE OF MAINE  
17 State House Station  
Augusta, ME 04333

5b

**Tier 1 / Tier 2 Decision**

Applicant Name & Address:

A&G Associates  
426 Forest Avenue  
Portland ME 04101

DEP Project Number: 99-869-S

CORPS Permit Number: 199902985

**Project Location: end of Kansas Avenue, Portland**

Description of Work: Fill approximately 4,364 square feet of freshwater wetland for the construction of a residential driveway leading into lot #24 and the end of a hammerhead turn-around. This project is associated with a stream crossing and also applies to soil disturbance adjacent to the freshwater wetland. Previously permitted wetland impacts under DEP #98-666-S total 2,756 square feet. Cumulative wetland impacts for this project total 7,120 square feet.

Permit for:	<input checked="" type="checkbox"/> Tier 1	<input type="checkbox"/> Tier 2
Date of Joint Review:		
DEP Decision:	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied (see attached letter)
CORPS Action:	<input type="checkbox"/> Approved $\Rightarrow$	<input checked="" type="checkbox"/> Review Pending, contact the Maine Project Office
	<input type="checkbox"/> enclosed	
	<input type="checkbox"/> pending (see below)	

Approval Pending: The Corps, Maine Project office, is in the process of reviewing the project. The final decision will be forthcoming directly from their regional office headquarters.

Special Conditions: No fill for lot development.

**Standard Conditions:**

- Approval from both the DEP and the Army Corps of Engineers is required in order to proceed with your project. This permit is good for two (2) years from the date signed and is transferable only with prior approval from the Department.
- The project must be completed according to the plans in the application. Any change in the project plans must be reviewed and approved by the Department.
- Properly installed erosion control measures must be installed prior to beginning the project, and all disturbed soil should be stabilized immediately upon project completion.
- A copy of this approval will be sent to the City of PORTLAND. Department approval of your activity does not supersede or substitute the need for any necessary local approvals.

This decision satisfies the Water Quality Certification requirement.

Please note the attached sheet for guidance on appeal procedures. If you have any questions regarding this, please contact Dawn Hallowell at 207-822-6300.

  
MARTHA G. KIRKPATRICK, COMMISSIONER

12/14/99  
DATE

cc: file  
City of Portland  
Tom Greer, Pinkham & Greer



Att. 6

**From:** Anthony Lombardo  
**To:** Kandi Talbot  
**Date:** Wed, May 17, 2000 7:13 AM  
**Subject:** The Pines, Lots 12, 24A & 24B

Kandi,

I have reviewed the "subdivision plan" submitted and have the following comments:

1. The proposed sanitary sewer connections, for both Lots 24A & 24B, into the City's Virginia Carter Interceptor Sewer, in Montana St., must specify on the plan that a "core drilled" connection is the only one acceptable to Public Works. The size of this section of City's sewer main, pipe material and slope should be specified as well.
2. The plan should also specify the slope, pipe size and length of the proposed sanitary service from Lots 24A & 24B.
3. The plan should also specify the depth to each proposed sewer connection into the City's sewer. The applicant, for accuracy, must supply the inverts for each City manhole on either side of the proposed sewer service connection.



**CITY OF PORTLAND**

May 12, 2000

Amy Mulkerin  
Greg McCormack  
The Pines of Portland, Inc.  
426 Forest Avenue  
Portland, ME 04101

RE: The Pines, Lot 24

Dear Ms. Mulkerin & Mr. McCormack:

After review of the submitted plan for Lot #24, the following comments have been generated.

1. The plan should show clearly the building envelope for lots 24A and 24B.
2. Note 5 shall be removed from the plan.
3. A note should added to the plan stating that two street trees per single family lot will be installed.
4. A draft easement for the utilities and private drive shall be submitted to staff for review.
5. The deed for Lot 24A shall be submitted that shows the language for the easement to the pond from the common open space shall be submitted for review by staff.
6. A detail of the private drive shall be submitted.

I am currently waiting for comments from Steve Bushey. Any further comments from staff will be forwarded to you as soon as possible. If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

*Kandice Talbot*

Kandice Talbot  
Planner

**DELUCA HOFFMAN ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

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Finally, we recommend that the project provide water quality infrastructure as required in the revised Section V, Stormwater Management Standards, of the City's Technical and Design Standards and Guidelines. These measures are required to be consistent with the practices delineated in MeDEP's Stormwater Management Best Management Practices manual.

It is our opinion that a watershed master plan as suggested above will provide the best opportunity to:

- Minimize the potential for flooding to abutter both downstream and within the development;
- Minimize erosion and maintain stability of the unnamed stream;
- Minimize water quality degradation of the unnamed stream and Casco Bay;
- Provide a full understanding of the implications of changes in the phasing of the project, should that occur. This will allow the City to respond in a knowledgeable manner.
- Provide a full understanding at the beginning of the project of the impact of the full build-out development on the area; and
- Provide for orderly and cost-effective construction of the development to the full build-out condition.

**PUBLIC WORKS ENGINEERING**  
**MEMORANDUM**

**To:** Alex Jaegerman, Chief Planner  
**From:** Anthony Lombardo, P.E., Project Engineer  
**Date:** April 1, 1999  
**Subject:** Wyoming Avenue Subdivision...A & G Associates.

The following comments were generated during Public Works Engineering review of proposed development of Wyoming Avenue, westerly off Virginia Street. The plans submitted are not dated, but were received March 24, 1999.

The requirements for the development of 14-403 Streets are the same as for the development of new subdivisions and new streets. The applicant, therefore, must submit the plans and supporting materials required under Article IV- Subdivisions...in Chapter 14, Land Use Regulations of the City Ordinance. The applicant does not, however, need Planning Board approval, but only staff review and approval.

This area of Portland, historically, has drainage problems. The applicant, therefore, must provide a stormwater management plan, including drainage calculations for pre and post-development runoff. The watershed needs to be modeled to determine the peak elevation on the inlet side of the proposed culvert crossing. Sizing calculations must be provided for the proposed culvert.

The applicant must provide evidence of DEP permit applications and approvals for the proposed culvert crossing and wetland filling.

Storm drain laterals need to be specified on the plans for Lots 3 & 4. Proposed foundation and basement drains should connect into the storm drain laterals and connect into the proposed underdrain system in the street.

The proposed driveway openings are not drawn per City of Portland Technical and Design Standards. Driveway openings must be drawn four (4) feet wider at the street gutter line than at the edge of the right of way.

The applicant has not specified an appropriate snow plow turnaround. The hammerhead dead end, as specified, will result in the blockage of the driveway to Lot 5 during winter snow plow operations. Public Works is requesting the applicant extend the paved construction of the street to the end of both Lots 3 & 4. The required snow plow turn-around, as specified in the Technical Standards, should be constructed at the end of the street. Please keep in mind that a dedicated easement to the City must be specified on the plans for the portion of this turnaround that extends into private property.

The plans should specify the distance to the nearest fire hydrant on Virginia Street.

The plans must specify seven (7) feet long granite tipdown curb on each side of driveway openings.

The applicant must provide a construction detail, drawn to City of Portland Technical and Design Standards, for the proposed driveways.

Per the City Standards, the applicant must provide a four (4) feet wide vegetated esplanade on both sides of the street, between the curb and sidewalk.

The applicant must provide either an galvanized aluminum or pressure treated timber guardrail on both sides of the street, adjacent to the proposed culvert crossing.

Applicant must provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.

**PUBLIC WORKS ENGINEERING**  
**MEMORANDUM**

**To:** Alex Jaegerman, Chief Planner  
**From:** Anthony Lombardo, P.E., Project Engineer  
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- The applicant must provide evidence of DEP permit applications and approvals for the proposed culvert crossing and wetland filling.
- Storm drain laterals need to be specified on the plans for Lots 3 & 4. Proposed foundation and basement drains should connect into the storm drain laterals and connect into the proposed underdrain system in the street.
- The proposed driveway openings are not drawn per City of Portland Technical and Design Standards. Driveway openings must be drawn four (4) feet wider at the street gutter line than at the edge of the right of way.
- The applicant has not specified an appropriate snow plow turnaround. The hammerhead dead end, as specified, will result in the blockage of the driveway to Lot 5 during winter snow plow operations. Public Works is requesting the applicant extend the paved construction of the street to the end of both Lots 3 & 4. The required snow plow turn-around, as specified in the Technical Standards, should be constructed at the end of the street. Please keep in mind that a dedicated easement to the City must be specified on the plans for the portion of this turnaround that extends into private property.
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- *Applicant must provide evidence of capacity letters from all of the respective utility companies, including a sewer capacity letter from Public Works.*

Att. 11

R04-068-008  
DARGIE DAVID C &  
9 CHARLOTTE DR  
FALMOUTH ME 04105

R04-068-019  
LALUMIERE PAUL R JR  
397 NAVY COVE BLVD  
GULF BREEZE FL 32561

R04-068-006  
HOUSTON FLORENCE JELLO &  
4 HURLEY LN  
FALMOUTH ME 04105

R04-068-005  
HOFFMAN CAROLYN &  
5 HURLEY LN  
FALMOUTH ME 04105

R04-068-D  
PROCTOR FREDERICK G &  
68 LEDGEWOOD DR  
FALMOUTH ME 04105

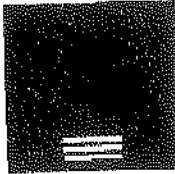
U35-009-A  
LABBE CARL A  
70 LEDGEWOOD DR  
FALMOUTH ME 04105

U35-009-B  
ALPREN HEIDI ALENE &  
76 LEDGEWOOD DR  
FALMOUTH ME 04105

U35-009  
DAVIS CHESTER E &  
80 LEDGEWOOD DR  
FALMOUTH ME 04105

U35-C11  
TRIBODEAU GAIL E &  
90 LEDGEWOOD DR  
FALMOUTH ME 04105

Post-It <sup>®</sup> Fax Note	7871	Date	8/15/99	# of pages	1
To	Jennifer Deay	From	Jennifer Deay		
Co/Dept	City of Portland	Co	Town of Falmouth		
Phone #		Phone #	781-8253		
Fax #		Fax #	781-8279		



DELUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

716 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX. 207 879 0596

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

## MEMORANDUM

**TO:** Kandi Talbot, Planner

**FROM:** Steve Bushay, P.E., Development Review Coordinator

**DATE:** October 1, 1999

**RE:** Site Plan Review - The Pines

I have completed a brief review of the subdivision and site plans last revised 9/27/99 for the Pines Residential development. My review should be considered as supplemental to the previous review completed by Jim Wendel, formerly of our office. I am unaware of a formal Applicant response to Mr. Wendel's July 20, 1999 comment memorandum to you; therefore, I will presume the Applicant has addressed those issues. I offer the following additional comments:

1. The Applicant has provided a stormwater analysis that relies on the attenuation of stream flow/runoff upstream of a 4' x 6' concrete culvert, located near the current end of Penn Avenue. The capacity of this culvert will result in short duration ponding on the upstream side of the structure and an overall decrease of downstream peak flows, despite increased development within the watershed. The area upstream of the box culvert is primarily wetland.

The State of Maine DEP Chapter 500 Regulation, Part 3.D(3) states the following:

*"(3) NRPA approval. The basin may not be located within or adjacent to a wetland, stream, river or brook (intermittent or perennial), and no berm may be placed within or adjacent to a wetland for detention or as part of the stormwater system, unless approved by the department pursuant to, or exempted from, the Natural Resources Protection Act (NRPA)."*

All wetland impacts and proposed stormwater management system must receive MeDEP approval. It is recommended this be received prior to final Planning Board approval. I am unaware of the current NRPA application status for this project.

2. The attenuation of flows created by the 4' x 6' box culvert will result in higher floodwaters at the rear of the properties between Jersey Avenue and Utah Street. The applicant has submitted a letter outlining their review of possible impacts to resident lots (Pinkham & Greer, September 22, 1999). They have concluded that the increased water levels due to ponding will not result in increased basement flooding at Virginia Street. Based on my limited review, I cannot support or deny this point outright. I would recommend the Board consider this issue closely and all effort be made to hold the applicant responsible for any impacts created by these proposed conditions.



**DELUCA HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS**

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3. The plans appear to have limited data regarding erosion control measures including silt fence. The plans should be updated to include adequate erosion control measures and the attached MoDEP Standards for stabilizing sites for the winter.
4. The applicant should be required to provide a pre-blast survey for any ledge removal since it appears highly likely that trench rock removal will be required for the deep sewers. The Public Works Department should review the proposed sewer depth (18' ± on Liberty Way).
5. The plans do not appear to completely identify the stream limits per a hand drawn sketch plan drawn by the Applicant's wetland scientist and provided to our office. This and the status of all NRPA permitting should be addressed by the Applicant.

**From:** "Steve Bushey" <srbushey@maine.rr.com>  
**To:** "Kandi Talbot" <KCOTE@ci.portland.me.us>  
**Date:** Mon, Nov 29, 1999 4:49 PM  
**Subject:** The Pines

Kandi,

I have reviewed the subdivision plats and Erosion control plan for the Pines and have no further comments on the plans. I will provide a letter to you on Tuesday.

Steve Bushey